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January, 1957

Drug and Cosmetic Industry

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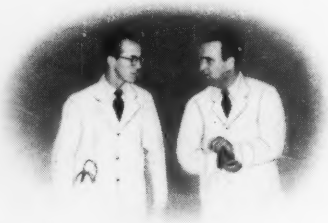

Increasing interest among MD's
Continued widespread interest in the pharmaceutical industry and the medical profession reaches new heights with release of information at the symposium on "Newer Vitamins" held under the auspices of the National Vitamin Foundation at Vanderbilt University. The importance of pyridoxine in the field of nutrition is emphasized.

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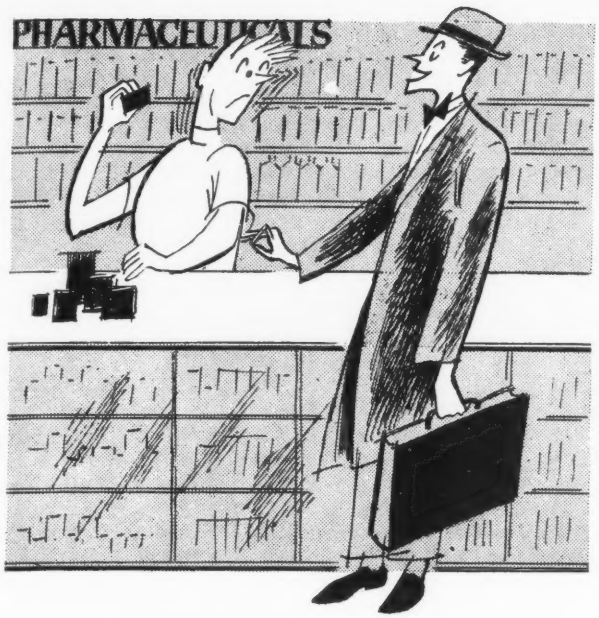

"Wait till I show you our new 1957 capsule and tablet models."

Keeping Posted

Restrictive Sales; Fair Trade

The restrictive sales controversy as to what drug products may and may not be sold by other than registered pharmacists is continuing to be investigated by a committee of the National Drug Trade Conference. To a sub-committee of the Conference originally composed of Dr. Robert P. Fischelis, secretary of the American Pharmaceutical Association, and James F. Hoge, counsel for the Proprietary Association, a third member, George Frates, Washington representative of the National Association of Retail Druggists, has been added. This is a sub-committee of the Committee on Uniform State Legislation of which Harold C. Kinner is chairman. Recently this committee engaged, through the George Washington University Law School, John Seuss to review the pharmacy laws of the various states so as to determine what is the best language to be used for a new uniform state law which would then be drafted.

The Conference was told that the Bureau of Education on Fair Trade had decided to follow the conclusion of the Pine Orchard conference on the subject, namely, that there is no alternative to the present situation in Fair Trade but to seek new legislation. There are two basic principles on which such legislation can be based: 1) Protection of the property rights in a trademark; and 2) Protection of small business. It was said that an appeal for legislation for the protection of small business was generally believed to be the approach that would receive greater support from legislators. Also it was said that because of the attacks on trademark rights coming from some quarters similar to the attacks on patent rights, that it was not wise to couple up trademarks and an appeal for fair trade. It was pointed out that although fair trade is still effective in 36 states, movements are under way in Idaho and New Mexico to repeal the fair trade laws of those states.

It is thought that 1958—an election year for Congress with President Eisenhower in his last two years—would be the best time to press for Federal legislation. Furthermore it will take all of 1957 to mobilize small business for action in 1958.

Cosmetic Excise Tax

George Frates, Washington representative of the National Association of Retail Druggists asked the House Ways and Means Committee to shift the cosmetic excise tax from the retail to the manufacturing level. Some reasons given by Mr. Frates are that under the present system the government is losing revenue by not being able to collect all the tax from rack jobbers, grocery stores, oil stations, beauty parlors, barber shops, farmer market operations, and house-to-house canvassers.

Northam Warren Jr., on behalf of the Toilet Goods Association, and Jacob Reck, on behalf of the National Barber and Beauty Manufacturers Association, opposed any shift of the collection of the tax to manufacturers levels. Mr. Reck pointed out that Congress had exempted in 1954 products used professionally in beauty and barber shops, and argued that putting the collection of the tax at the manufacturer level would create a difficult, if not impossible problem of continuing this exemption because of the necessity of shop owners to file for refunds.

Danger from Drugs

In a recent report of the annual meeting of the Committee on Toxicology of the American Medical Association, the following statements appeared under the subhead Exploitation of Nonprescription Drugs:

"During the past year, several instances potentially harmful to the public health, especially that of children, have occurred. Representative situations include promotion of a clown-shaped medicine bottle designed to attract children to the container, promotion of vitamin pills on a children's program in a manner appealing to the toddler's taste for sweets, and distribution of aspirin by vending machines. Since drugs cause 20 per cent of the accidental deaths (33 per cent in children under five years) and 22 per cent of the suicides from nongaseous poisons, the Committee

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feels compelled to comment on these developments. "Devices intended to tempt children to accept drugs as something other than medication can have only unfortunate consequences. Medicine containers designed as toys tempt the very young to take freely of their contents. Vending machines for the automatic dispensing of aspirin, vitamin and other nonprescription drugs are subject to the same censure. Such machines operate unattended, and children cannot be expected to discriminate between those that dispense gum and candy and those that dispense drugs. Accordingly, the Committee moved that it be placed on record as against the use of vending for drugs in public places accessible to children and others lacking in mature judgment."

These statements should be considered seriously by drug manufacturers, especially in view of the present heat over restrictive sales provisions in the state pharmacy laws. The vending machine angle is of major importance. But attracting children to the use of nonprescription drugs by use of appealing containers and flavors is also something that must be carefully studied as some control might eventually be deemed necessary. It is one thing to flavor prescription drugs for children so that they can be more readily administered when the child is under the care of a physician, but it is quite another thing to flavor drugs for children sold over-the-counter. Vitamins as well as laxatives and other drugs are potent substances and harm can definitely be caused by the consumption of too large amounts.

A.M.A. Doctor-Manufacturer Survey

The American Medical Association is to spend $50,000 to survey the attitude of the doctor toward the pharmaceutical manufacturing industry. The poll will ask physicians in five geographical areas their opinions on advertising, direct mail, and detailing techniques of the manufacturers. As the result of liaison committee meetings between the A.M.A., the A.D.M.A., and the A.P.M.A., the questionnaire is being drawn up with the cooperation of the industry. The survey is expected to be completed by next Fall.

Dr. Fischelis—Drug Man of Year

Dr. Robert P. Fischelis, secretary of the American Pharmaceutical Association, has been elected as the retail drug field's Man Of The Year 1956. The Man Of The Year award, established by the American Druggist, retail drug fortnightly magazine, honors the man who, each year, makes the most constructive contribution to the welfare of the retail drug field in that year. Selection is made by a panel of drug industry leaders including presidents and secretaries of all national, state, and local pharmaceutical associations and boards of pharmacy, the deans of all accredited colleges of pharmacy, and the editors of all national, state, and sectional drug publications.

Dr. Fischelis received the award for 1956 because he played a leading role in crystallizing and presenting the views of those in the drug field who see dangers to public health in the procedure whereby a drug which has been limited to sale on prescription only is released by the government for sale without a prescription. He represents many pharmacists who believe that potent drugs which are transferred from prescription-only to over-the-counter status may be misused by purchasers who do not fully understand or heed the cautions given on the labels.

Helping the Physician

In giving an opinion as to how pharmaceutical houses can be of greater service to the practicing physician, one doctor tells how to do through the detail man, while another doctor would do it through the elimination of the detail man.

In a recent edition of Scope Weekly, Upjohn's newspaper for physicians, Dr. J. Robert Hudson, general practitioner of Cincinnati, says:

"The detail man holds the answer to that. Those I deal with are all experts, far cries from the old drug drummer, but each has only some of the attributes I would like to see in every one of them. The detail man must be:

"A purveyor of knowledge on new drugs, calling all of them to the doctor's attention.

"A pharmaceutical historian, telling the physician how a new drug was developed, discovered, etc.

"A condenser of pharmaceutical literature, able to tell in five minutes the meat of half a dozen articles that would take the doctor hours to read.

"A walking 'index medicus,' ever able to answer the question: 'Where can I find a good article about . . .?'

"And he should at all times familiarize the physician with every detail about the physical appearance of a new drug.

"The detail man is a constant contestant in a medical quiz show. The doctors are always throwing whoppers to him, and he should always be able to answer them or to know where to find the answer. It's an immeasurable help.

"If a company had twenty men of this caliber, they'd never have to worry."

On the other hand, Dr. Joseph A. Sargent, general practitioner of Rochester, N. Y., answers:

"1. Eliminate sending detail men into a physician's office. Most doctors are too busy for this outmoded method of advertising.

"2. Stop using glowing reports from obscure, unimportant, and obviously untrained medical reporters and journals to advertise products.

"3. Stop manufacturing combinations of drugs in one product when such combinations have no proved basis in rational therapeutics. Unfortunately, too many doctors use them because they are 'something new.'

"4. Stop sending samples of drugs to doctors except by request. They are seldom used collectors of dust, invitations to disaster for inquisitive children, and getting rid of them is just another annoying chore for the nurse. Why not have all companies pool these drugs and send them to religious missions overseas?"

Kerrigan Memorial Awards

The James J. Kerrigan Memorial Awards for the children of employees of Merck & Co. have been established by the Board of Directors. Upon recommendation of a special committee of directors con-

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sisting of Henry W. Johnstone, chairman, Dr. Vannevar Bush, and Dr. A. N. Richards, the Board chose this form of tribute to the late Mr. Kerrigan who started with the company as an office boy in 1907 and rose to the office of president (1950-1955) and Chairman of the Executive Committee before his death last September.

Two Kerrigan Memorial Scholarships will be awarded annually, beginning with the 1957-1958 academic year, to secondary school seniors planning to enter college in the Fall. Only sons and daughters of Merck employees residing in the United States will be eligible. An outside committee will be appointed to make selection of applicants based on such factors as scholastic standing, leadership and responsibility, financial need, and character.

Government Health Survey

A comprehensive survey of the extent of illness, disability, and accidents, together with availability of medical care is to be conducted by the U. S. Public Health Service. The survey, authorized by Public Law 652, is a tremendous undertaking involving house-to-house questioning of about 4,000 households a month to obtain information on all members of the families. Sampling will be done on a statistical basis, and will be a continuing project, with new families being questioned each day. Results will be tabulated at quarterly or yearly intervals. It is estimated that each interview will take thirty to ninety minutes, depending on the circumstances and the size of the family. About fifty items will be covered, with eighteen of general character, and the remainder specific questions on health status, number of visits to doctors, hospital stays, recent illnesses—involving both self-diagnosis and recollection of doctor's advice and time lost from work and school. Questions will relate principally to occurrences during the four weeks just prior to the interview. There will also be special surveys, which may cover such problems as cost of medical care, repetitive illnesses, and chronic diseases.

A planning conference for the survey was held last month with about twenty-five invited representatives of various organizations present. Included among these were: George, Health Information Foundation; Robert Fischelis, American Pharmaceutical Association; Karl Bambach, American Drug Manufacturers Association; James Stuart, Hospital Care Association —Blue Cross; James Coleman, United Medical Service, Inc.—Blue Shield; and George Cooley, American Medical Association. Dr. Lowell T. Coggeshall presided over the conference. The survey will be conducted under the direction of Dr. Forrest E. Linder, formerly Deputy Chief of the Office of Vital Statistics of the U.N., and now Director, National Health Survey Program. This program is in the Division of Public Health Methods of the U. S. Public Health Service, G. St. J. Perrott, Chief.

Prescription Substitution Down

Substitution on prescriptions is estimated at 4.3 per cent, against a rate of 14.7 per cent in 1953, according to Robert A. Hardt, president of the National Pharmaceutical Council. In some troublesome areas, said Mr. Hardt in addressing the annual meeting of the Council, where substitution was running as high as 15 to 20 per cent, the percentage has dwindled to between two and four per cent. "But this is not a time to sit back and admire or suspend our efforts," said Mr. Hardt. "Indeed, that time will never come. The personnel of state boards of pharmacy is continually changing. New students are entering the colleges. The work of the Council must go on."

Mr. Hardt told of the booklet, "24 Reasons Why Prescription Brand Names Are Important to You," which is being sent to every doctor so that he may realize the dangers of substitution. Prepared from arguments submitted by NPC executive vice-president Newell Stewart and William Powers, the booklet emphasizes the dangers, such as lack of potency, incompatibility, lack of purity, variations in sustained release, improper enteric coatings, improper syrup content, and inaccuracy in such things as solubility, particle size, choice of base, quantity of active ingredients, and other factors.

Achievement Award to Dr. Reddish

Dr. George F. Reddish, chief bacteriologist of the Lambert-Hudnut Division of Warner-Lambert Pharmaceutical Company, last month received the 1956 Achievement Award for outstanding work in the fields of public health, disinfection, and antisepsis. The award plaque states that Dr. Reddish has made "signal contributions to the theoretical as well as the practical aspects of public health, disinfection, and antisepsis," adding "Among other scientific achievements, Dr. Reddish developed methods of determining the effectiveness of disinfectants and antiseptics which became guiding standards for their evaluation."

Graduating from the University of Kentucky and obtaining his Ph.D. from Yale in 1922, Dr. Reddish served as associate professor of bacteriology in the Medical College of Virginia, joined the U. S. Food and Drug Administration in 1924, became chief bacteriologist for Hynson, Westcott & Dunning in 1927, returned to the FDA the following year as senior bacteriologist, joined the Lambert Pharmacal Company in 1929 as director of bacteriological research, a post he held until 1955 when he became chief bacteriologist of Warner-Lambert's Lambert-Hudson Division.

Too Many Specialists

"The proper ratio of family doctors to specialists is about three to four to one," according to Mac F. Cahal, executive secretary and general counsel of the American Academy of General Practice, who continued: "Today, the ratio is about two to one. In short, we have more specialists than we need and not enough family doctors."

"Too many medical school freshmen, intent upon becoming family doctors, change their minds before they graduate," he pointed out. During four years in medical school, the percentage drops from about 90 per cent to about 30 to 35 per cent. However, this condition is being improved rapidly and today a higher percentage of medical graduates are choosing general practice for their professional careers.

Family doctors must be free to send patients to hospitals for diagnostic and therapeutic care, said Mr. Cahal, who pointed out a serious discrepancy between

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fees for medical and diagnostic services and fees for surgical fees which has caused intense competition for surgical work and has prompted some hospitals to arbitrarily discriminate against the family doctor.

Dow Amino Acids

The Dow Chemical Company has moved into production a new half million dollar pilot plant capable of producing all eighteen of the amino acids sold by Dow, although only fifteen will be produced in this plant. The other three, glycine, methionine and acetylmethionine are already produced in commercial quantities. Dow amino acids include all which are essential to human nutrition except threonine. This will be produced in the new plant when released from laboratory studies it is now undergoing.

New Fair Trade Angle

An interesting attitude on fair trade was taken by the Circuit Court of Appeals which ruled that Esso Standard Oil Company could not enforce fair trade in the sale of gasoline at retail in Massachusetts because such action might force large users to deal directly with others than the retail service stations. Esso is appealing the decision but will not press any other fair trade enforcement actions while the appeal is pending.

F.T.C. Cites Syndee

Syndee, Inc., Chicago, has been charged by the Federal Trade Commission with representing that its domestic perfumes and colognes are made in France. The Commission also charged the company with misrepresenting the regular price of its products and with simulating nationally advertised perfumes and colognes. Simulation of national brands was accomplished through advertising, packaging, shapes of bottles, and simulated trade names. Deception as to origin arises from use of French names or words such as "by Syndee" and "by Yvonne."

FDA Loses on Restitution

The Food and Drug Administration lost its case to force restitution of the purchase price in the long contested Wayne A. Parkinson case. The Ninth Circuit Court of Appeals upheld the decision of the U. S. District Court that the FDA has no jurisdiction to order restitution in cases of misbranding or adulteration, and that this must be expressly authorized by Congress. The decision was extremely critical of the FDA's attempt to extend its regulatory in absence of statutory authority. The final step would be an appeal by the FDA to the U. S. Supreme Court.

New Cyanamid Division

A new division of American Cyanamid Company, known as the Farm and Home Division, has taken over the sale of veterinary products from the Lederle Laboratories Division, the Animal Feed and Food Industry Departments from the Fine Chemicals Division, and some agricultural products. A. B. Clow, formerly general manager of the Fine Chemicals Division, is heading the Farm and Home Division. The agricultural Chemicals Division has been redesignated the Nitrogen and Allied Products Division and is handling the bulk sale of fertilizers, insecticides, and mining chemicals, under the direction of F. S. Washburn.

ADMA-APMA Merger

No attempt was made to submit the proposed merger with the American Drug Manufacturers Association to the members of the American Pharmaceutical Manufacturers Association during the mid-year meeting of the A.P.M.A. held in New York last month. A session, closed to members of the A.P.M.A. was held to discuss the subject but no definite conclusions were reached as to the desirability or feasibility of the proposed merger. While many problems remained unresolved, negotiations will be continued by unanimous agreement so that every aspect of the situation can be fully aired. Some of the problems before the merger committee are the status of associate members (the A.D.M.A. has no associate members), the nature of the combined organization, membership eligibility rules, the size and composition of the board of trustees, whether or not an executive committee will be included, and other equally important considerations.

Health News Institute Board

The board of trustees of the Health News Institute has been completed with the appointment of additional members from constituent member associations. The board now consists of: representing the American Drug Manufacturers Association, Adam H. Fiske, Eli Lilly and Company, J. C. Leppart, executive vice-president Olin-Mathieson Chemical Corporation in charge of Squibb Division, George F. Smith, president of Johnson & Johnson and chairman of the board of trustees of HNI, and Dr. Ernest H. Volwiler, president of Abbott Laboratories; for the American Pharmaceutical Manufacturers Association, Kenneth F. Valentine, president of Pitman-Moore Company and president of HNI, S. Barksdale Penick Jr., president of S. B. Penick & Company and treasurer of HNI, Francis C. Brown, president of Schering Corporation, and Robert A. Hardt, vice-president of Hoffmann-La Roche; for the National Association of Retail Druggists, Dr. John W. Dargavel, secretary of NARD, and Edgar S. Bellis, past president and now a member of the NARD's president's advisory board; for the National Wholesale Druggists Association, Harry Kimbriel and James Allen, for the Federal Wholesale Druggists Association, Ray C. Schlotterer; for the Proprietary Association, Dr. J. Mark Heibert, president of Sterling Drug; for the National Association of Chain Drug Stores, Carl Willingham; and for the American Pharmaceutical Association, Dr. Robert P. Fischelis.

Industrial Dermatitis

A survey of 141 plants with 429,000 employees revealed that 26 per cent of these employees are exposed to potential skin irritants daily, and that at least nine per cent actually contact some form of skin trouble resulting in lost man hours. For the 59 companies able to supply information on time lost from the job, these men lost man hours totalled 18,219 in 1955. According to the survey, which was conducted

by the Association of American Soap & Glycerine Manufacturers, analysis indicates that this figure should be much higher, since many companies did not know the extent of the dermatitis problem, nor the amount of lost time it incurred. The best method of combatting industrial dermatitis is said to be through educating employees on how to recognize its causes and how to prevent skin disease before it occurs.

MCA to Recognize Chemistry Teachers

To recognize and reward outstanding university and college teachers in the field of undergraduate chemistry, The Manufacturing Chemists Association has announced a national Chemistry Teachers Award Program. Six awards of $1,000 each will be made in 1957 to teachers who, in the opinion of a board of judges, have been personally responsible over a period of years for holding and inspiring the interest of young people in the field of chemistry. In addition, a $500 award will be given to the institution represented by each winner, such awards to be designated for his department's use. Plans call for presentation of the awards at the annual meeting of the MCA next June.

Ten Feet of Hair per Day

We came across some scientific information the other day which surprised us. We read that hairs on the human head grow 1/3 of a millimeter per day, and since there are 100,000 hairs on the average human head, this means that the hair on such a head grows 33,333 millimeters or 33.3 meters per day. Since a meter is equal, approximately to 40 inches, or 3¼ feet, this means that the hair on the average human head grows over 100 feet a day. Think that if you get a hair cut every two weeks, you leave behind at the barber shop 1,100 feet of hair.

Lilly Antibiotic Capacity

A $2 million increase in fermentation facilities at Eli Lilly and Company's Tippecanoe Laboratories near Lafayette, Indiana will increase fermentation capacity there by fifty per cent. Additional 18,000 gallon fermenters will be set into the ground in a new wing on the present fermentation building where Lilly manufactures antibiotics.

Aspirin Statistics

In celebrating production of its millionth pound of aspirin recently, Monsanto Chemical Company dug up a lot of statistics concerning this chemical. Produced by Monsanto since April 1917, following expiration of the Bayer U. S. patent in February 1919, consumption in this country has risen to an annual rate of 16 million pounds, the equivalent of almost 50 million five grain tablets. Retail sales of aspirin and aspirin compounds as internal analgesics (not including cold remedies) in 1955 added up to $197,110,000, which was approximately twenty per cent above the 1954 total of $163,890,000.

The company says: "The 100 million pounds of aspirin produced by Monsanto to date is equivalent to 115 billion aspirin tablets, sufficient to cure headaches for every person in the United States every day for more than a year.

"Figuring a cup of water to each two tablets, all of the water that flows over Niagara Falls in 35 hours would be needed to wash down that many aspirin tablets.

"Laid out in single file, the tablets from 100 million pounds of aspirin would reach a distance equal to one and one-half round trips to the moon.

"In granular form, that much aspirin could blanket in white the entire State of Rhode Island."

Choice of Dentist

A dental insurance plan which will pay any dentist, anywhere in the world, for services given its subscribers, was announced last month by Group Health Dental Insurance, Inc. This is the first plan giving free choice of dentists. Previously, GHDI and similar plans, paid only for services rendered by participating dentists. GHDI president, Dr. Bissel B. Palmer, said his organization found that "people want to remain with their own dentists, and out of two years of experience and study has enabled us to give the public what it wants."

Benefits have been designed to help the public overcome their dental neglect and then maintain healthy teeth. They include one-half the allowance for fillings and extractions needed when a member has his initial x-rays, cleaning, and charting. For an extra one-time premium of $10 for an individual or $20 for a family, the plan will pay full benefits. Thereafter, GDHI provides comprehensive services: two cleanings and one set of bitewing x-rays per year, all fillings, extractions, fixed or removable bridges, full or partial dentures, porcelain jacket crowns, oral surgery, root canal work, orthodentia for children enrolled before the age six, and periodontia where authorized.

Monthly premiums for the basic plan are $1.65 for the individual; $3.30 for husband and wife; and $6.00 for the family. Enrollment must be through groups at the place of employment or through unions.

Government Attacks Merger

The recent merger of Owens-Illinois Glass Company and the National Container Corporation is the subject of suit filed last month in the Federal District Court in Toledo, Ohio, by the Department of Justice. In the suit, through which the Justice Department is attempting to break up the merger, the government claims that this merger makes the company the largest producer of shipping containers.

Owens-Illinois is a manufacturer of glass containers, and National Container is a manufacturer of fiber shipping containers. Fred E. Fuller, general counsel of Owens-Illinois, said National Container and his company had never been in competition. The merger, he said, permits Owens-Illinois to integrate its operations "back to the woods" by providing a source of container board which it uses to make packages for its glass products. National Container was described by the Justice Department as "completely integrated in the manufacture of shipping containers from the growth of timber to the finished container product." It was rated as the third largest producer of corrugated containers.

APMA Mid-Year Meeting

For research and use of drugs in his fight against epilepsy, Dr. William G. Lennox, Associate Professor Emeritus in Neurology, Harvard Medical School, received the 1956 Scientific Award of the American Pharmaceutical Manufacturers' Association. A past president of the International League Against Epilepsy and founder and past president of the National chapter, he has been associated with the Children's Medical Center in Boston for the last fifteen years.

Dr. William Gordon Lennox, Associate Professor Emeritus in Neurology at Harvard Medical School, and one of this country's leading neurologists, called upon the medical profession and drug manufacturers to pool their information on the effectiveness of drugs used in treating epilepsy and thus make possible a two billion dollar saving in the treatment of present child epileptics. Discussing the problem in an address accepting the 1956 Scientific Award of the American Pharmaceutical Manufacturers Association at the award dinner on the evening of the second day of the Mid-year meeting held December 10 to 12 at the Waldorf-Astoria Hotel, New York, Dr. Lennox said that information about the output of anti-epilepsy drugs would aid the "physician in knowing how many of our million or so epileptics are receiving modern therapy." He also declared that the failure of doctors to continue to report fatalities from the use of the drugs, makes it impossible to advise patients accurately about the risk of treatment."

Dr. Lennox said that there are now approximately 400,000 children under the age of twenty who are epileptic. "Suppose as a result of experienced use of present-day treatment," he added, "one in ten of these becomes self-supporting during adult life, instead of being a financial liability to relatives or the state. The difference between these two conditions might be at least $2,500 a year for forty years. The cumulative saving for children now living would be two billions of dollars."

He also called for support of a Brain Research Foundation through "the pooling of the best pharmaceutical, chemical, and neurological brains in an alliance of business and medicine." He said the study of the human brain has lagged behind the study of other less important organs. "The inaccessibility and complexity of the brain has awed the physician; the sad consequence of any defunction has frightened the people. Freudianism and mutilating brain operations have not filled the therapeutic void."

Dr. Lennox said that electroencephalography has made "that most wonderful of all God's creations, the human brain, open, like a book for study. If the heart, lungs, or joints fail, the individual suffers; but if the brain is disordered, the whole community or even the world may be in turmoil. And yet, brain study, in relation to the investigation of other organs, is sadly neglected."

The introduction of automatic equipment and increasingly complicated drug formulations has stimulated rapid development of precise statistical controls in the pharmaceutical industry, according to Dr. Martin A. Brumbaugh, director of statistics for Bristol Laboratories. "This industry, perhaps above all others, has, through the years, guarded the quality of its products. This is necessary because of the direct relation of these products to human welfare . . . and because of the dire consequences of quality deviation in a highly competitive market situation," said Dr. Brumbaugh, who added:

(*Continued on page 102*)

Almost 250 members of the Society of Cosmetic Chemists, their guests and wives, attended the reception and dinner dance December 13 at the Hotel Commodore in honor of Florence E. Wall, 1956 Medalist. Special guests were film actress Arlene Dahl and Warren Hull of the "Strike It Rich" TV show.

Stephen L. Mayham of the Toilet Goods Association was toastmaster at the dinner; Miss Wall's accomplishments were described by Hazel L. Kozlay, former editor of the "American Hairdresser" and by Dr. Marston L. Hamlin of American Home Products. The Medal was presented by the Society President George G. Kolar.

Florence E. Wall, the first woman to receive the Society of Cosmetic Chemists Medal, has devoted most of her professional career to cosmetics, as a chemist, in education and as a writer and is currently a consultant.

Sabbat J. Strianse of Shulton, Inc. was installed as President of the Society and will hold office during 1957. James H. Baker, of Gar-Baker Laboratories, Inc., a charter member of Society, is President-Elect and will assume office in 1958. Robert A. Kramer as Secretary, Walter A. Taylor as Treasurer, and Gabriel Barnett and Savery F. Coneybear, directors, were reelected to their respective offices. Retiring President George G. Kolar joins the Executive Committee, composed of Past Presidents of the Society, along with Kenneth L. Russell, Donald H. Powers, Paul G. I. Lauffer and S. D. Gershon.

Sabat J. Strianse, 1957 President

Miss Florence E. Wall, first woman to receive the SCC Medal is congratulated by film actress Arlene Dahl and TV star Warren Hull.

Society of Cosmetic Chemists

DECEMBER 13, 1956

Speakers at the morning session: left to right, M. G. de Navarre, Dr. Ernest Yeager, Dr. Donald A. M. Mackay, and Dr. W. L. Courchene.

The diversified scientific meeting included papers on glass containers, ultrasonic waves, instrumental techniques, the electron microscope, nonionic emulsifiers and preservatives, gas chromatography for aerosols and gas chromatography for essential oils.

William R. Prindle presented the paper on **New Developments in Glass Containers.** He is assistant to the technical director of Hazel-Atlas Glass Division, Continental Can Co. He headed research studies on alloy steel at the University of California

and served as project leader in the Division of Industrial Cooperation at Massachusetts Institute of Technology.

Imperfections and stress concentrations on the surface of glass have been investigated by means of both electron and optical microscopy and metal evaporation techniques. The role of these surface flaws in the breakage of glass has been more accurately established and means have been developed to reduce their effectiveness.

Very thin coatings of various materials have been applied to glass surfaces to preserve them from damage. Sulfur, various waxes, silicones and polyethylene have been used and their relative advantages and disadvantages have been determined. Impact, internal pressure and thermal shock tests made before and after simulated service tests have been used to establish the degree of protection offered by the coatings.

The resistance of glass to chemical attack has also been studied in more detail recently. The effects of various products on chemical durability are better known and chemical treatments are available which increase the resistance of glass to chemical attack.

Although there have not been many new developments in the field of colored glasses, colored plastic coatings on glass have given a much greater range of color possibilities. Considerable interest in protection of products against ultraviolet radiation has led to several new methods of protection, as well as a more thorough knowledge of the limits of the older methods.

Chemical Applications for Ultrasonic Waves was presented by *Ernest B. Yeager*, an authority on

Program chairman Ross C. Whitman, far right, assistant chairman William Markland, second from left, and afternoon speakers, left to right, Dr. Charles L. Teitelbaum, M. J. Root, Dr. William R. Prindle.

ultrasonics, electrochemistry and spectroscopy, and Associate Professor of Chemistry at Western Reserve University.

Ultrasonic waves are capable of producing both chemical and physical effects of interest to the chemist. The promise for ultrasonics in industrial chemistry lies in the physical effects and their applications to processing. These include: (1) the production of colloidal suspensions in liquids, (2) the degassing of liquids, (3) the increase of heat transfer and mass transport in gases and liquids, and (4) the production of the crystallization of various compounds. Many of the above applications are dependent on the sonically induced cavitation.

The paper on **Cosmetic Knowledge Through Instrumental Techniques,** by *E. G. McDonough, Donald A. M. Mackay and Murray Burdick* was presented by Donald A. M. Mackay, Associate Director of Research at Evans Research and Development Corporation.

The new physicochemical techniques, by filling in gaps in our present knowledge, can be used to solve problems and guide research. Unless one is aware of all the developments of the chemical field, there will be serious time lags before they are generally applied

1956 President George G. Kolar, left, and 1957 President-elect James H. Baker. Mr. Kolar is chairman of the 1957 executive committee. Mr. Baker becomes president in 1958.

in the cosmetic field. It is very important to be receptive to ideas from apparently unrelated fields of scientific endeavor.

The cosmetic field traditionally, because of its dependence upon subjective terms, has been very difficult for the scientist. Only comparatively recently has he been getting the tools he needs for the job.

Apart from uses in analysis, the new instrumental techniques are very helpful in determining the effects of cosmetics upon hair, skin and teeth. Data are required to show functioning of processes, or the absence of undesirable effects, or the creation of desirable effects.

Maison G. de Navarre, co-author of **The Interference of Nonionic Emulsifiers with Preservatives,** is Vice President of Cosmetic Laboratories, Inc., division of Beauty Counselors, Inc., editor of "The Journal of the Society of Cosmetic Chemists" and a founder, honorary member and Medallist of the Society. *Harold Bailey* collaborated in the investigation.

Previous publications by the authors have established the interference of certain nonionic emulsifiers with some common preservatives. The present report

(*Continued on page 105*)

Scientific Section

Under the Chairmanship of Orville Davenport of Avon Products, Inc., the Scientific Section of the Toilet Goods Association held its winter meeting in the Sert Room of the Hotel Waldorf-Astoria on December 12, 1956. Honorary Chairman was F. J. Austin, Vice-Chairman Emil G. Klarmann of Lehn & Fink Products Corp. and Secretary H. D. Goulden of the T.G.A. About 500 members of the Scientific Section and guests attended the session and the luncheon. Papers covered the fields of antiperspirants, cold waving, perfumes, research management, lipsticks and gas chromatography.

E. G. Helton, E. W. Daley and J. C. Ervin of the Toilet Goods Division, The Procter and Gamble Company, with E. G. Helton making the presentation, discussed **Zirconium Oxychloride—A New Ingredient for Antiperspirants.**

Zirconium oxychloride is a new commercial chemical contributing good antiperspirant properties to a properly buffered deodorant cream. Used in combination with aluminum chlorhydroxide, it has been shown to be more effective for a larger percentage of people than conventional creams or solutions. Two types of tests have shown its efficacy. One of these involved the application of the cream on the backs of subjects and measuring the amount of perspiration by use of an indicating cream. In the other test, the cream was applied to the axilla in a standardized manner and the amount of perspiration measured by weighing pads placed under the arms.

Other investigators have shown that zirconium oxychloride has a very low order of toxicity. The present work with the buffered cream combination discussed above confirms this information and extends it to include data concerning eye irritation, percutaneous effects, and human patch testing. The cream is shown to be safe for use as an antiperspirant and essentially non-irritating after repeated application of closed patches. Consumer-use tests over a period of six months to a year have also established its safety.

A Method for Determining the Waving Efficiency of Cold Permanent Wave Lotions was discussed by *Donald H. Kirby*, Research and Development Laboratory, John H. Breck, Inc.

The method as described in this paper consists of winding hair on a pegboard and allowing to process in a closed container for a specific period of time. At the end of the waving time the hair is neutralized, taken from the pegboard and placed in a pan containing approximately three inches of water. The curl is measured while in the water with the results obtained in centimeters. This measurement is applied in a formula giving a result in per cent waving efficiency. The method is repeated at several different waving time intervals, and from the results obtained can be plotted on graph paper forming a curve.

In this paper several different waving lotions of known thioglycolic acid and free ammonia content were tested and curves drawn. One of the lotions tested contained monoethanolamine thioglycollate.

Edward P. Morrish delivered the paper prepared by *Raymond A. Osbourn* of Georgetown University Medical Center, *Thomas W. Tusing* of Hazleton Laboratories, *Francis P. Coombs*, and *Edward P. Morrish* of Firmenich, Inc. on **Dermatological Evaluation of Perfumes of Low Sensitizing Index.**

Skin sensitivity of perfume is a problem of ever increasing importance in marketing, in use of perfume, and perfume substance. Research in Geneva, Switzerland, was directed to producing perfume of low sensitizing index by patch testing and screening carefully selected mixtures of individual aromatic chemicals or carefully controlled isolates of natural products.

These materials were formulated and re-formulated to remove proven skin sensitizers. Through these efforts, ten standardized perfume mixtures, each with a different odor characteristic, were produced for use in cosmetic and pharmaceutical products.

A panel of 1029 women from different geographical locations in the United States participated in a 21 day usage test. Approximately 26 per cent of the subjects had past histories of "perfume sensitivity," and approximately 39 per cent had histories of dermal contact allergy.

The data established in these tests indicate that, statistically on the five per cent level, 94.7 per cent of the women who are sensitive to perfumes or have other allergies could use these new mixtures without reaction. By the same type analysis, 98.9 per cent of the women who had no prior history of perfume sensitivity or skin dermal reaction could use these perfumes without reaction.

Joseph Kalish of "Drug and Cosmetic Industry" delivered a paper on **The Functions of a Cosmetic Research Department.**

The nature of research within the company is necessarily, and should be wholly practical. Until such time as fundamental problems can be exactly defined, basic research had best be supported in an academic research atmosphere. Special, short-term, non-recurring investigations are ordinarily better handled by outside consultants; only when these problems multiply sufficiently will it be profitable to

T.G.A. DECEMBER 12, 1956

set up facilities within the company to handle them. The over-all consultant, presenting an outside point of view, can often act as a useful catalyst.

The technical group, led by the director, has a number of important functions, but some are not exploited adequately. This seems still to be the case with respect to promotion—ideas for new products or new ideas to make standard products attractive. In an essentially promotional industry such as ours, cooperation between technical and promotion divisions should be most intimate. As ease of communication increases, both benefit, so that even partially developed ideas can be nurtured to become profitable products.

Mary Jakovics of Avon Products of Canada, Ltd. discussed **Dispersion of Pigments in Lipsticks.**

Sweating of lipstick is a well recognized difficulty that exists in spite of the care that is exercised in the formulation and testing of lipsticks. Comparison of various shades of the same type of lipstick narrows down the search for causes of sweating to investigation of pigment dispersions. Uneven distribution of pigment particles and tendency to sweat are related. Microscopic examination of lipstick serves as means of forecasting stability. Lack of uniformity of pigment dispersions is a result of incomplete wetting of pigment particles. Gas or vapor adsorbed on the surfaces of pigment particles is the barrier between the surrounding medium (oil) and the pigment, that retards wetting. Gas from the surface of incompletely wetted pigment particles diffuses slowly in the lipstick mass. As lipstick is subjected to temperature changes that affect the equilibrium within the lipstick mass, expulsion of gas may take place.

Nathaniel Brenner of the Perkins-Elmer Corporation discussed the **Application of Gas Chromatography to Toilet Goods Analysis.**

Gas chromatography analysis can be applied in anyone of several ways to analytical problems which heretofore could be solved only by very laborious standard chemical means. The technique can give a complete quantitative analysis suitable for quality control of materials. It can also be used to identify complex materials by simply comparing the total fractogram or "fingerprint" of the material as it appears on a recorder chart. It has the almost unique capacity of being able to detect adulterants and impurities in cosmetics materials even when the operator has no prior knowledge of the identity or quantity of these traces.

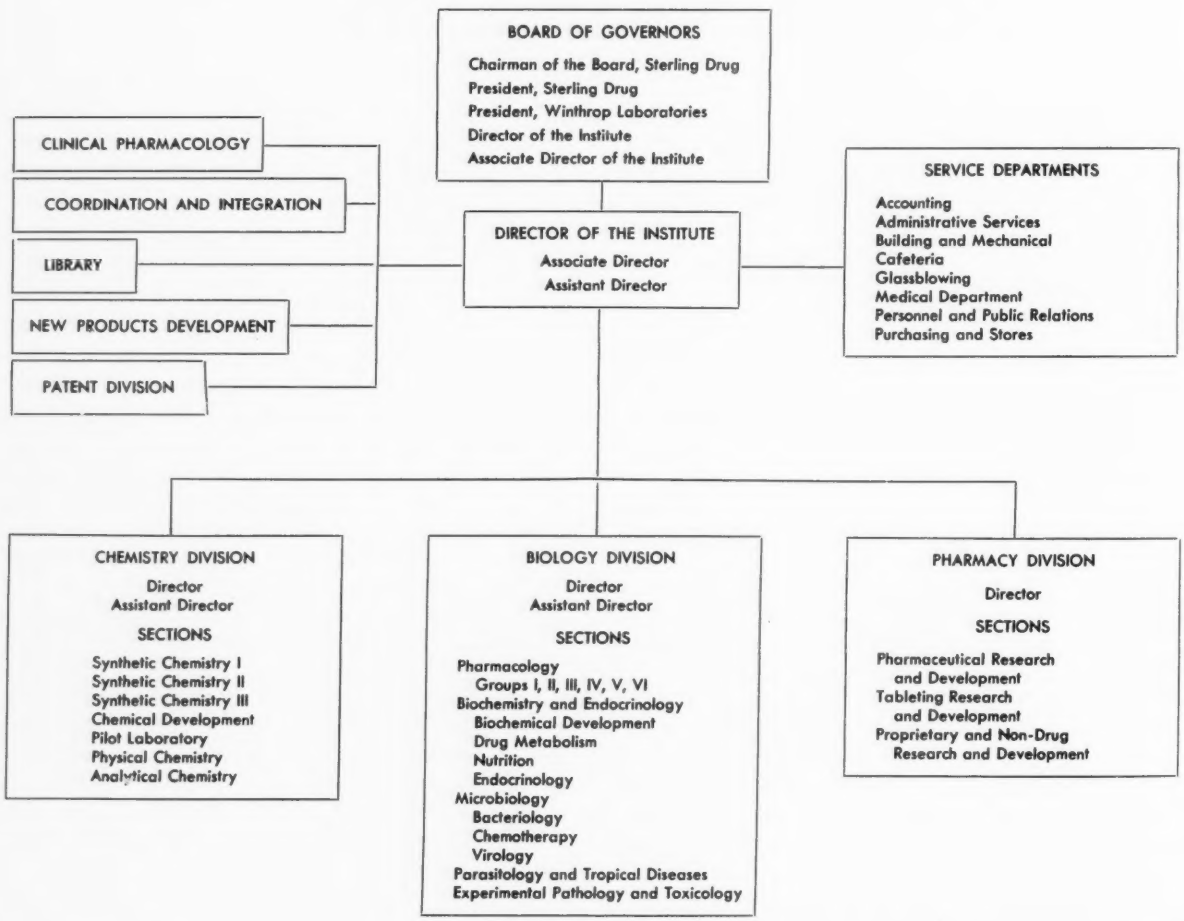
The instrument can also be used to prepare high purity samples of materials generally found only in complex mixtures. This enables the analyst to obtain small quantities of these rare materials for further study.

A short discussion of the actual instrumentation of gas chromatography preceded the demonstration of applications.

Pharmaceutical Research Organization 4.

Sterling Drug, Inc. along with its domestic and foreign subsidiaries, is organized in five divisions, one of which is the Sterling-Winthrop Research Institute. The Director of the Institute, along with his associate director, is a member of the Board of Governors which also includes the Chairman of the Board and the President of Sterling and the President of Winthrop Laboratories. A number of staff functions are controlled by the Director as well as staff departments. Operating divisions of the Institute are divided among chemistry, biology and pharmacy, each being subdivided into manageable sections.

STERLING-WINTHROP RESEARCH INSTITUTE
A Division of Sterling Drug, Inc.



The Norwich Pharmacal Company Scientific Department is organized in two divisions—the Research Division and the Medical Division—apparently co-equal, and with their respective directors. The Research Division has assistant directors heading the Chemical Branch and the Biology Branch, while the Medical Division is organized as a Medical Branch and a Veterinary Branch.

During 1955, construction was completed of a chemical development laboratory and pilot plant adjacent to the company's research center. Plans were drawn and work begun on an animal experiment station to screen and test new veterinary drug products and to expand research in the field of feed additives for larger animals.

The opening of the new research center accelerated projects under way and permitted the initiation of new research; in 1955 the research staff totaled ninety-six. A number of studies were concerned with Furadantin; virus research has progressed to the point where compounds are being screened for anti-viral properties in animals, major emphasis being placed upon Newcastle's disease and the coxsackie virus. Other major research projects are concerned with the development and evaluation of new chemicals and drugs against asthma, topical and internal fungus infections, bacterial infections and intestinal and tropical diseases. Veterinary studies have been undertaken with Furoxone and Furamazone. Furaspor and Furadantin are also being investigated in veterinary applications. Two new nitrofuran compounds have shown some effects in the control of plant fungal diseases.

NORWICH PHARMACAL COMPANY
Scientific Department

New Drugs Over-the-Counter*

by Peter J. Farago, M.D. DEPUTY MEDICAL DIRECTOR
FOOD AND DRUG ADMINSTRATION

Any drug limited to prescription use by an effective new drug application shall be exempted from prescription-dispensing requirements when the Commissioner finds such requirements are not necessary for the protection of the public health by reason of the drug's toxicity or other potentiality for harmful effect, or the method of its use, or the collateral measures necessary to its use. This procedure can be initiated by the Commissioner or by any interested person. A petition is submitted presenting reasonable evidence for the request and this may be in the form of a supplement to an effective new drug application. This may also be in the form of a new drug application. Upon receipt of these data, if the evidence warrants, the Commissioner publishes a notice of proposed rule making in the *Federal Register* and invites written comments. After all of the available information is considered, a regulation may be issued granting or refusing the exemption. If it is decided, either at the time of the proposed rule making or after the written comments are submitted, that more complete development of the facts is necessary, a public hearing may be called. The notice of this hearing must specify the questions to be considered. Following the hearing the final regulation is issued. If the Commissioner finds that notice and public hearing are impracticable, unnecessary, or contrary to the public interest, he can issue the final regulation.

In summary, the following are the main steps involved in their chronologic order: (1) Submission of a petition. (2) If the evidence appears adequate, then publication of a notice of proposed rule making in the *Federal Register* setting forth the conditions under which the drug might be allowed to change status, and invitation of written comments. (3) Granting or refusing the exemption at this stage or calling of a public hearing if further development of the facts is required. (4) Issuance of final regulation. At stage (1), if the evidence submitted does not demonstrate that the preparation can be safely used as directed for self medication, the firm is so advised and the matter ends there until it meets the requirements or receives court review.

Finally, two other points worth reviewing are that (a) a drug exempted from the prescription-dispensing requirement by this procedure is a "new drug" until it has been used to a material extent or for a material time under such conditions, and (b) a prescription caution statement in the labeling of such a drug constitutes misbranding.

Now let us look at the scientific requirements for the prescription-exemption procedure. I wish that I could give a master plan which would apply to all cases, but I cannot. Why? Because each case must be individualized. A better understanding of the problem might result if each of you put yourself in the position of the evaluator. What questions would you consider? Would it be,

How *long* has this drug been used with safety?

What has been the *extent* of its use?

Were there any problems regarding its *stability, shelf life,* and *manufacturing processes?*

What *types of precautions* have been required?

What has been the *marketing picture?*

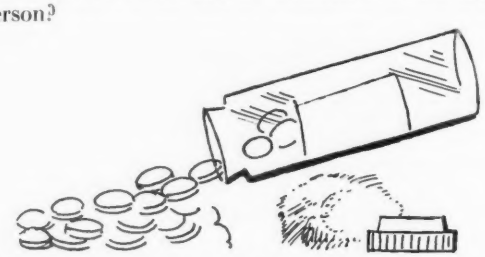
Are there any *side-reactions?* Are the latter important?

What *systems* do they involve?

Are the side-reactions *insidious* in nature? Would they escape the notice of a layman and yet be discovered by a physician who is alert to them? (E.g., blood dyscrasia.)

Does the condition being treated or alleviated warrant the risk of undesirable side effects? If so, what ratio is a valid one between therapeutic effects and side effects?

Can indications for use be addressed to the lay person?



*Presented to the Proprietary Association, New York, December 11, 1956.

Can adequate directions for use, including indications, be written for the lay person?

What disease process is being treated? Does the disease process require medical diagnosis and supervision?

In each of the preceding considerations, every drug may present an individual problem.

Now you have skimmed the surface and you begin to dig into the meat of the problem. What happens?

You see specific scientific questions. For example, here is a hypothetical product proposed for over-the-counter use and you find only several hundred clinical reports in the entire file. There is no additional data in the literature and before long you say, "*An appreciable number of case reports* are rather important before this product can be released for non-prescription use."

You go on a little further and find that more than fifty per cent of the reports are testimonials stating the drug was given and the patients improved. Does this represent sound medical-scientific observation? Possibly, but you're not certain. You begin to think, "A *reasonably detailed account is necessary*, in order to obtain some concept as to the validity of the observations.

You also discover that this product in its directions is recommended for two weeks use and yet in only seven per cent of the case reports has the duration of therapy exceeded by several days this length of time. *Isn't duration of therapy important?*

There was a case of stomatitis reported to have occurred in one patient while on therapy. Coincidence? Possibly; but it would be a help to have a blood count. You think, "*Probably it's important to analyze and follow up any reaction of this type that occurs concurrently with therapy.*" There are many other little problems that you think about now, almost instinctively. They're something like this. Are there any gross alterations in response with respect to racial, sex and age differences. Granted, these latter considerations are not major ones but you do recall that the negro is more sensitive to the drug Primaquine, that the female may have a "feline reaction" to morphine and that text book rules for children's dosage levels do not apply to all drugs.

The pharmacology and chemical control methods are reviewed and they meet all of your expectations. There are acute and chronic toxicity studies, pathology reports, and an easy chemical method of standardization and identification.

Now that we have reviewed the law and science involved, we turn to the practicality aspect and our thinking takes on a new twist. The law says, "Is the prescription requirement necessary for the protection of the public health?" Science pure replies, "I must be satisfied in every detail." Practicality reports, "Let me review the matter and I will attempt to help you."

With respect to *total numbers of cases* we must consider other factors. Is there any evidence of sensitization; do the pharmacological or clinical studies give any hint of drug toxicity; what kind of preparation is this? (E.g., topical or oral.) All this bears on the problem and it is apparent that this particular requirement for each drug will vary depending on some of the aforementioned points.

What *about duration of* therapy? Can't one make a reasonable inference that the chronic animal toxicities give us an indication as to long-term toxic potentialities in man? This is not always true, particularly along hemotologic lines. However, in this specific case, although only seven per cent of the clinical cases are reported as receiving therapy slightly longer than two weeks, can't the negative one year chronic animal toxicity reports help us in resolving this problem? We know from experience that while the latter are helpful they are *not* a complete substitute for adequate clinical trials.

A reasonably detailed account—We want to know how the patients reacted in general. For this over-the-counter problem, we're not interested in every detail pertaining to each patient but we would like

(Continued on page 106)

Evaluating Low Sensitizing Perfumes*

by Raymond A. Osbourn, M.D. — DEPARTMENT OF DERMATOLOGY, GEORGETOWN UNIVERSITY MEDICAL CENTER, WASHINGTON, D. C.
Thomas W. Tusing, M.D. — HAZELTON LABORATORIES, FALLS CHURCH, VIRGINIA
Francis P. Coombs, M.D. — NEW YORK CITY
Edward P. Morrish, M.S. — NEW YORK CITY

More than seven years ago, in Geneva, Switzerland, Dr. Roger Firmenich with aromatic chemical knowledge, and Dr. Werner Jadassohn, the world famous dermatologist, instituted a program of research in an attempt to answer the question. "Why should there not be perfumery compounds that would be safer for use on human skin?"

Scope of the Problem

It was realized that to undertake such a program, chemically reproducible perfume compounds must be made since there would be no value in studying either variable natural products or other perfumery materials that could not be carefully, chemically controlled. This complete chemical knowledge was imperative if such products were to be assessed for their dermatological safety.

Many reports have appeared in the literature about the dermatological reactions of perfumes or perfumery components. An exhaustive review of the literature, citing 52 references, was made by Klarmann in 1954.[1]

Examination of these references and others reveals a lack of adequate appreciation by many of the reporters of the vast and complex problems of this type of investigation. Perfume compounds may consist of from 10 to 60 or more components in three broad classifications: natural products from flowers, plants, roots, herbs, wood, and gums; animal products and their extractives; and the aromatic chemicals which usually account for as much as 80 per cent to 90 per cent of the perfume compositions. Their sub-groups are hydrocarbons, alcohols and phenols, aldehydes, acetals, ketones, ketals, esters, ethers, ether esters, lactones, and nitrogenous compounds.

Natural compounds are not sacrosanct when dealing with their dermal significance. The hallowed mantle of dermatological safety that surrounds them, because they are endorsed and approved by time honored use in official compendiums is a unique fallacy. Every batch of natural perfume essences requires a new dermatological study to assure the safety of that batch.

Superimposed on these considerations are the inadvertent use, under non-average use conditions, on abraded or injured skin, sunburn, acne, psoriasis, chemical damage to protective layers of skin, synergistic action, site of application, and vehicle used. Intact human skin has a natural, protective, and resistant action that contributes to varying dermal response thereby precluding specific interpretation.

It is rare today that anyone uses a known, specific skin sensitizer or primary irritant. These can be excluded with care; routine, careful investigation; and use tests. The difficulty of eliminating sensitizers often causes cosmetic perfume condemnation, because the mechanics of their elimination are not so well understood, either chemically or dermatologically.

Definitions of terminology and characteristic, dermatological responses used here are well defined by Sulzberger[2], Draize[3], Haggard[4], and Rothman[5].

The group of perfumery components generally termed aromatic chemicals are, for the most part, chemical identities. They can, therefore, be controlled by all of the methods of analysis—chemical and physical. With these established, an investigator can then continue with organoleptic, pharmacological, physiological, and dermatological pre-testing to assure greater measures of human, dermal safety.

Pre-testing with such background knowledge can eliminate to a large extent, primary irritation or specific sensitization. Such testing can, to a very large extent, predict in part and eliminate, so far as is mathematically and statistically possible, known sensitizers; or those materials which might possibly produce an allergic response. It is obvious that no tests, that are within the scope of physical or economic consideration, could be conducted and would eliminate all components or combinations that might produce an allergic response.

*Abstracted from the Proceedings of the Scientific Section of the Toilet Goods Association, No. 26, December 1956.
®Trade Mark registered by Firmenich Incorporated.

CHART 1.

Chemicals, essential oils, and other products studied and screened by patch tests in preliminary investigations; some of these materials were formulated into perfume compositions for extensive study.

Alcohols
Citronellol
Geraniol
Rhodinol
Linalool, optically active
Linalool, optically inactive
Terpineol
Phenyl ethyl alcohol
Cinnamic alcohol
Anisic alcohol
Vetyverol
Benzyl alcohol

Aldehydes
Aldehyde C.9
Aldehyde C.10
Aldehyde C.11, undecylenic
Aldehyde C.12
Hydroxycitronellal Purified
Hydroxycitronellal, pure special grade (Cyclosia Base®)
Hydroxycitronellal dimethylacetal
Alpha-amylcinnamic aldehyde
Heliotropine
Aldehyde C.8
Methyl nonyl acetic aldehyde
Phenyl acetic aldehyde
Anisic aldehyde
Para-isopropyl alpha methyl phenyl proponic aldehyde
Citral

Esters
Citronellyl acetate
Geranyl acetate
Linalyl acetate
Benzyl acetate
Phenyl ethyl phenyl acetate
Dimethyl phthalate
Amyl salicylate
Phenyl ethyl acetate
Terpenyl acetate
Geranyl isobutyrate
Benzyl benzoate
Benzyl cinnamate
Cinnamyl cinnamate
Methyl hydro abietate
Methyl phenyl acetate

Phenols & Derivatives
Eugenol
Paracresol
Diphenyloxide

Nitrogen Derivatives
Muscambrette
Musk xylol
Indol

Lactones
Nonalactone
Undecalactone
Coumarin

Ketones
Ionone-alpha (Violette A.C.)®
Ionone-beta (Violette B.C.)®
Ionone-alpha chemically pure
Methyl-ionone special grade (Iralia)®
Methyl-naphthyl ketone
Musk ketone

Essential Oils
Bergamot Oil
Lemon oil
Sweet orange oil concentrated (Tetrarome orange)®
Neroli bigarade oil
Ylang extra oil
Patchouli oil
East Indian sandalwood oil
Guaiacwood oil
Lavandin oil
Clove buds oil
Petitgrain oil Paraquay
Geranium bourbon oil
Cedrene (ex Virginia cedarwood oil)
Oakmoss extract

Purified Essential Oils
Bergamot redistilled
Geranium bourbon redistilled
Guaiol ex Guaiacwood oil
Ylang extra redistilled

Resins and Other Natural Products
Styrax resin specially purified
Benzoin resin
Peru balsam decolorized
Civette specially degreased

In the light of this knowledge, there was developed a group of perfumes—Chemoderms.® These Chemoderms were evolved and tested so that they could be used in cosmetic and pharmaceutical products. The chemical research groups availed themselves of specialized help in the field of physiology, pharmacology, and dermatology in the interest of determining themselves that there would be as little dermatological response as possible when these Chemoderms were used in cosmetic creams.

Because these Chemoderms are carefully prepared mixtures of individual, aromatic chemicals, or carefully controlled chemical isolates of natural products, it is self-evident that such composition, so made, could be dermatologically tested to insure, so far as was possible, the safety of the perfume composition.

Preliminary Investigation

In summary, studies of a large number of these perfumery components (see Chart 1) were made by the usual closed patch tests on the backs of both men and women under carefully controlled, dermatological conditions.

With this preliminary screening consummated, and the Chemoderm perfumery compounds formulated, a new series of screening, evaluating tests were commenced in the United States to assure the further

(*Continued on page 108*)

The Functions of a Cosmetic

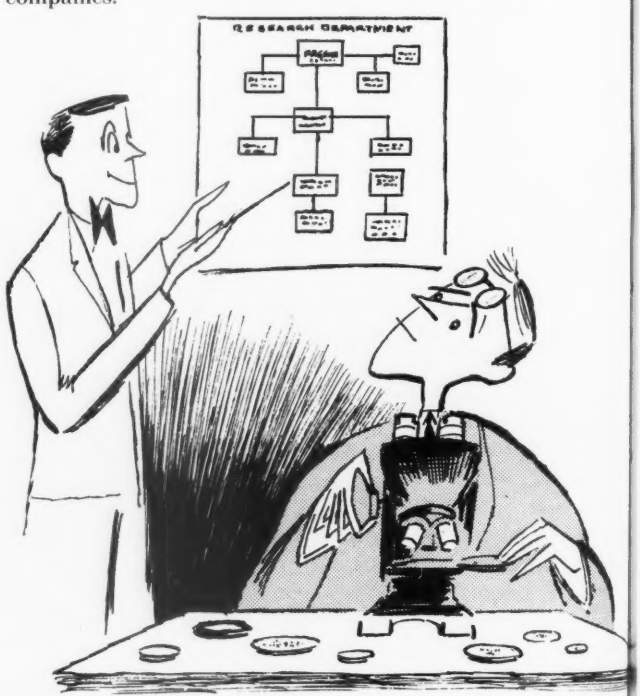
My subject, the research function, has interested me for a long time, since I strongly believe that there is need for research people and business men to understand and appreciate each other more fully for their mutual benefit. Much progress has been made in this direction, but there is still room, it seems to me, for even better utilization of industrial research as part of a cooperative business organization.

I suppose that in talking to a scientific group I should define my terms as soon as possible. First, business exists to make a profit. This statement, obvious to the point of banality, is nevertheless sometimes forgotten at the lab bench. The cosmetic industry makes its profit by selling externally applied preparations to increase the attractiveness of men and women. Increasingly, of course, this is coming to include preparations to improve the health of the skin, the hair, and the scalp and in time many cosmetics and pharmaceuticals will be indistinguishable.

When I talk of the research function, I include any seeking for new technical knowledge involving technical operations of a non-routine or non-repetitive nature. This may well include, along with purely laboratory investigations and clinical studies, such work as pilot plant operation, new engineering installations and setting up market research studies. The definition has purposely been made broad because there are numerous instances where, for organizational reasons or because of the personalities involved, some research functions may be carried on in departments not primarily concerned with research. I believe that what I have to say about the research function ought to apply wherever the function is exercised. Incidently, too great diffusion of this function may result in competition, say between production and research in pilot studies; even though this is sometimes encouraged, I say it is almost always bad or even destructive.

Although research is certainly increasingly important and appreciated in this industry, it cannot be compared in terms of money spent or people involved with research in the making and selling of chemicals and pharmaceuticals. As in any business selling brand name merchandise to consumers, we must depend heavily upon advertising and other forms of promotion, and only after adequate provision has been made for these necessary expenditures can allocations be made for research, the insurance against competition and the provision for future growth. Even so, research budgets are rapidly increasing in the cosmetic industry as new products and improvements in old ones become essential to retain a position in a fiercely competitive market.

A number of companies with substantial cosmetic sales have large research organizations and spend a great deal of money for research. For the most part, however, these companies derive major revenue from other business; cosmetic companies rarely spend as much as five per cent of their sales on research and development, as is not uncommon in the pharmaceutical industry, and research staffs are correspondingly small. Because of this, a research table of organization, a necessity in a large group where personal contact and individual direction are haphazard and difficult, tends to be superfluous in most cosmetic companies.



*From Proceedings of the Scientific Section of the Toilet Goods Association, No. 26, December, 1956.

Research Department*

by Joseph Kalish, Ph.D.
DRUG & COSMETIC INDUSTRY

Cosmetic Research

The primary duties of a research department are the development of products that sell, and the acquisition of knowledge about the products that will keep them salable and increase their sales volume.

Basically, development of a new product in cosmetics is no different in original concept from other types of technical and scientific research: it first requires knowledge, as complete as possible, of what was previously done and what is being done. From this knowledge arises the additional vital information as to what has not been done, but what it is possible to do; where current products can be improved; when current competitive products should be copied. I will not dwell upon facets of cosmetic and related technical literature but must assume that the investigator who is not completely abreast of developments reported in the literature or in meetings, or, as much as possible, by personal contacts, is badly handicapped and cannot operate efficiently. The specific knowledge to be acquired is that obtained by the collection and examination of competitive products. Outstanding products, or those which at first glance seem to justify new claims for their effectiveness, should be analyzed in an attempt to discover new raw materials or possible new production techniques. This, of course, should be followed by attempts at duplication. Seldom, if ever, is a product marketed as a slavish duplication of competition; the mere act of duplication invariably suggests, to the experienced investigator, methods by which the product may be improved, and improvements may be substantial.

For duplication, and even more for original research, every laboratory usually has a large selection of raw material samples along with a complete literature file. Suppliers try with considerable success to provide complete information about applications of their products and often possess formulas that can be adapted into new consumer preparations. Parenthetically, the good technical salesman is a valuable consultant in problems involving his materials and is often an indispensable source of general news and information.

In the development of a new product, the experience and know-how of the investigator should permit him almost routinely to combine his ingredients into a close approximation of the desired product. A certain amount of work ensues in switching proportions of ingredients and modifying details of the process to make a product of optimum quality, cost and ease of manufacture. Even before the pilot plant stage, which is necessary to assure a large scale product comparable to the one made in the laboratory, essential control steps must be developed as a guaranty of uniform chemical, physical and use properties. Control must not be carried on blindly, however, but should be limited to measuring essential characteristics of the product. At all stages of the research process, intelligent judgment must be exercised.

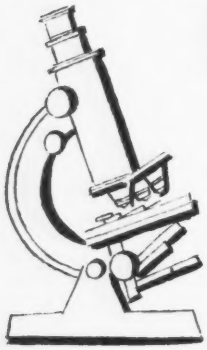
Finally, the new product must be not merely what the chemist thinks it should be; it must be one that the customer will want. As early as feasible, and as an adjunct to the development of specific properties in the product, market testing should be undertaken. I mean a valid statistical study, not a spot check with a small number of women in the organization, or the boss's wife. Because of the often subjective response to cosmetic products, even those with measurable effectiveness, we have special problems that can be best resolved by testing consumer acceptance. The end result of pure chemical research may be a known chemical, made cheaper or purer than before; evaluation is wholly objective and easy. This is still true, with due consideration for economic factors, in the marketing of a new chemical, where application research by the manufacturer and his customers determine the potential market with reasonable assurance. Pharmaceutical products, which vary in effectiveness from outstandingly better to only slightly so, are evaluated, for reasons of safety and the determination of efficacy and for marketability, by elaborate laboratory investigations, by animal tests and then in controlled human studies. These studies are intended to provide a basis for objective evaluation, and are often able to do so.

In cosmetics as yet the situation is not well defined. It is possible, for instance, to make a lipstick with a deeper stain or a shampoo that cleanses better, but can you know ahead of time that this is what the customer really wants? She may think that she wants certain properties but may not really welcome them

(*Continued on page 115*)

FOREIGN Pharmaceutical PATENTS*

by Leonard J. Robbins
PARTNER - LANGNER, PARRY, CARD & LANGNER



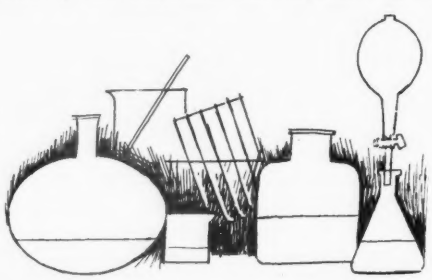
Introduction

Up to the middle thirties, pharmaceutical patents were fairly rare animals. Although the chemical industry as a whole was then certainly flexing its muscles, few would have predicted that within 20 years pharmaceuticals would be manufactured and distributed on a world wide scale and on a highly competitive basis, that their names would no longer be the esoteric language of doctors but would be household words, and that patent protection would have become a major objective of research and also a major problem of research policy.

The changing environment or climate of research in this new era of economic expansion, and the growing realization of the interdependence of research and patents, is well illustrated by the early histories of penicillin on the one hand and the sulfa drugs on the other. Penicillin crept onto the scene more or less unheralded and essential disclosures were made in technical papers without any thought of patent protection. With the sulfa drugs on the contrary, the research here and in Europe just before the war was covered by patents in a large number of countries; this was one of the first instances of the recognition from the outset of the importance of a new pharmaceutical product on an international scale. How large is the interest of the pharmaceutical industry here in foreign patents? As far as I am aware, no numerical survey has been made. The figure of interest is the number of patent applications filed abroad each year. They represent the direct fruits of research, and they also represent hope: some fall by the wayside for various reasons before becoming issued patents. There are well over 100 countries throughout the world having patent laws. Only the major countries publish detailed statistics. However, an analysis of these statistics plus some guesswork and extrapolation, leads to the conclusion that the U. S. pharmaceutical industry at the present time is filing several thousand foreign patent applications a year—probably of the general order of magnitude of 1500 to 2000. This means that the industry is probably now filing about as many or almost as many foreign applications as domestic applications.

This ratio is considerably greater than for the chemical field in general, and certainly much greater than in other different fields. What is the reason? It is clearly due to the nature of the pharmaceutical industry itself which can operate in small units based on skills rather than large capital investments. Therefore even the smaller countries can be competitors, and consequently an important new U. S. invention must be filed in a large number of foreign countries if adequate protection is to be obtained. To put it another way, in the international field, the U. S. pharmaceutical industry has the inherent occupational misfortune of being faced with far more potential foreign sources of competitive infringement than any other industry. Anything of value that is left unprotected, is likely to be appropriated.

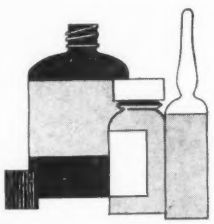
I will touch briefly at this point on a situation which dramatically illustrates the disruptive effect of lack of patent protection. In Italy, the Italian patent office has refused to grant patents for pharmaceuticals for many years. This is a complex situation involving much politics and litigation. However the net result is that in the absence of patents, the Italian industry has been able to appropriate and copy many important U. S. and other foreign pharmaceutical products. Furthermore, such products have been exported from Italy to numerous other countries where patents do exist. Since infringement cannot be stamped out at its source in Italy, such export can only be stopped piecemeal by the laborious and expensive process of



*Before American Pharmaceutical Manufacturers' Association, Dec. 10, 1956.

bringing individual infringement suits in each country. Few are willing to engage in such a battle, unless a very major commercial situation is involved. By analogy, if an important invention is not protected in any of the principal producing countries, they can become similar sore spots. In view of the expense of research, and the often limited life of new products, the pharmaceutical industry is more dependent on patents than any other. In the absence of foreign patents, competitors may obtain a free ride.

There is another special problem abroad. In many foreign countries, the patent laws have certain restrictive provisions with respect to pharmaceutical inventions. The basis is public policy, but the effect is actually discriminatory. I will come to various aspects of these restrictive provisions later. However at this point, I would urge the industry to take greater interest in the International Convention for Industrial Property. By discussion and exchange of views between the American Association and the various foreign groups, there may be possibilities for revision and gradual relaxation of bars which would ultimately be reflected in the patent laws of the Convention countries.



It is clear that the executives in charge of a pharmaceutical company's foreign policy have no easy task. Three principal reasons exist for obtaining foreign patents—a/ as assurance of a *prima facie* right against others to import into the foreign country; b/ as a source of revenue from manufacturing licensees in the foreign country; and c/ as protection for manufacture by subsidiaries or affiliated companies. I believe there may be a fourth one: namely that salesmen abroad find the going smoother when backed up by patents. However, each of these reasons must be weighed against the hard alternative facts that any invention not patented in a foreign country can be used freely by foreign competitors, and that all U. S. inventions obviously cannot be protected in all foreign countries, if the company is to remain solvent. The only solution is to avoid arbitrary and empirical decisions, and to formulate a rational policy based on the nature and potentialities of the company's products and a balancing of the efforts and expense involved against the profits accruing from foreign business.

The Effects of Publication and Use

To implement a foreign patent program in an orderly manner, it is essential that those in charge of it should have a good working knowledge of some basic differences between the U. S. and foreign patent laws and regulations, and in particular the effects o publication and use of the invention. Foreign filing can be quite useless unless timed properly.

Inventors and clinical investigators in the pharmaceutical field are usually anxious to publish their results as soon as possible, and sales managers are eager to ship new products to their distributors. But such publication and use may automatically destroy the possibility of securing valid foreign patents. There are many sad examples of rushing into print in haste, and repenting at leisure.

First and foremost, no publication or commercial use should take place before the United States patent application is filed; although harmless under the United States patent law for one year, this in general is not so in any other important country except Canada. Secondly, after the United States application has been filed, decisions concerning foreign filing, when to release publication, and when to permit use must be made at appropriate times if full benefits are to be secured in the foreign field.

The International Convention, which permits the benefit of the United States filing date to be claimed in a foreign country within one year, irrespective of any intervening publication or use, is of course a vast help—and most important countries are members of the International Convention. (This is one of the few international treaties which has survived two wars and is universally applauded as a sensible arrangement.) There is also the Buenos Aires Convention, having similar priority provisions, to which the United States and a number of Latin American countries belong, and which is of use in those not belonging to the International Convention. However, a few important countries, mostly in Latin America—such as Argentina and Chile—are entirely outside these mutually protective arrangements. It is true that some of these permit patents of confirmation, whereby a patent can be obtained corresponding to an issued patent in another country, irrespective of any publication provided there has been no use within the country. However, in view of the widespread international distribution of pharmaceuticals, it may not be safe to wait for a patent of confirmation.

The United States pharmaceutical manufacturer is almost always in a serious dilemma when considering foreign filing and balancing costs against potential advantages. It may take several years after the filing date of a United States patent application to test a new product. Should foreign filing be delayed until it is certain the product is valuable? Even if there is

no publication or use, such delay may be dangerous, since, in view of competitive research, others may in the meantime have obtained dominating foreign patents. It is certainly safer to file within the priority year in convention countries, and as promptly as possible in the nonconvention countries; once foreign filing has actually been effected, any subsequent publication and use can have no harmful effect.

A given situation must be judged on its merits; the important thing is to be aware of the essential foreign provisions, so that failure to obtain foreign protection will be deliberate, not an unwelcome surprise.

What to File and Where to File

"What to file" and "where to file" are of course fundamental considerations which may haunt the dreams of a company executive. An invention must obviously be evaluated in terms of its potential importance. If the invention relates to an improvement in a known process, or a new product having only specialized uses, no foreign filing at all may be warranted, or only in a few selected countries where manufacturing licensees may be operating. But if no foreign patents are obtained on an important new product—such as a new antibiotic—it could be copied by competitors in numerous countries for both their own domestic market and export to other consumer countries. Apart from the loss of revenue to the United States patentee, uncontrolled foreign competition can flood world markets with material of poor quality.

Fortunately the procedure in most important foreign countries permits combination of a number of U. S. patent applications into a single foreign application provided they all generally relate to the same invention. Here, an important new development is usually protected in a series of U. S. patent applications as research develops. Very often these can be sewn together into a single foreign application in the name of the assignee company (even though the U. S. inventors may be different). Since Convention priority dates are so important in these competitive days it is highly desirable that important new developments should be filed in the U. S. Patent Office within a year from the first filing: combination can then be effected with the benefit of multiple Convention priorities. However U. S. applications more than a year apart can often be combined either without priority or with partial priority.

Also most foreign countries permit later improvements to be protected as patents of addition to earlier patents. These are not subject to maintenance taxes—a topic mentioned later.

Four other factors must also be considered in selecting individual countries and determining the use and value of foreign patents: a) the type of protection possible—i.e., whether product and/or process claims are obtainable, b) whether patents will prevent importation of products, c) the working and compulsory licensing provisions in foreign patent laws, and d) the expense of foreign taxes.

Product and Process Claims

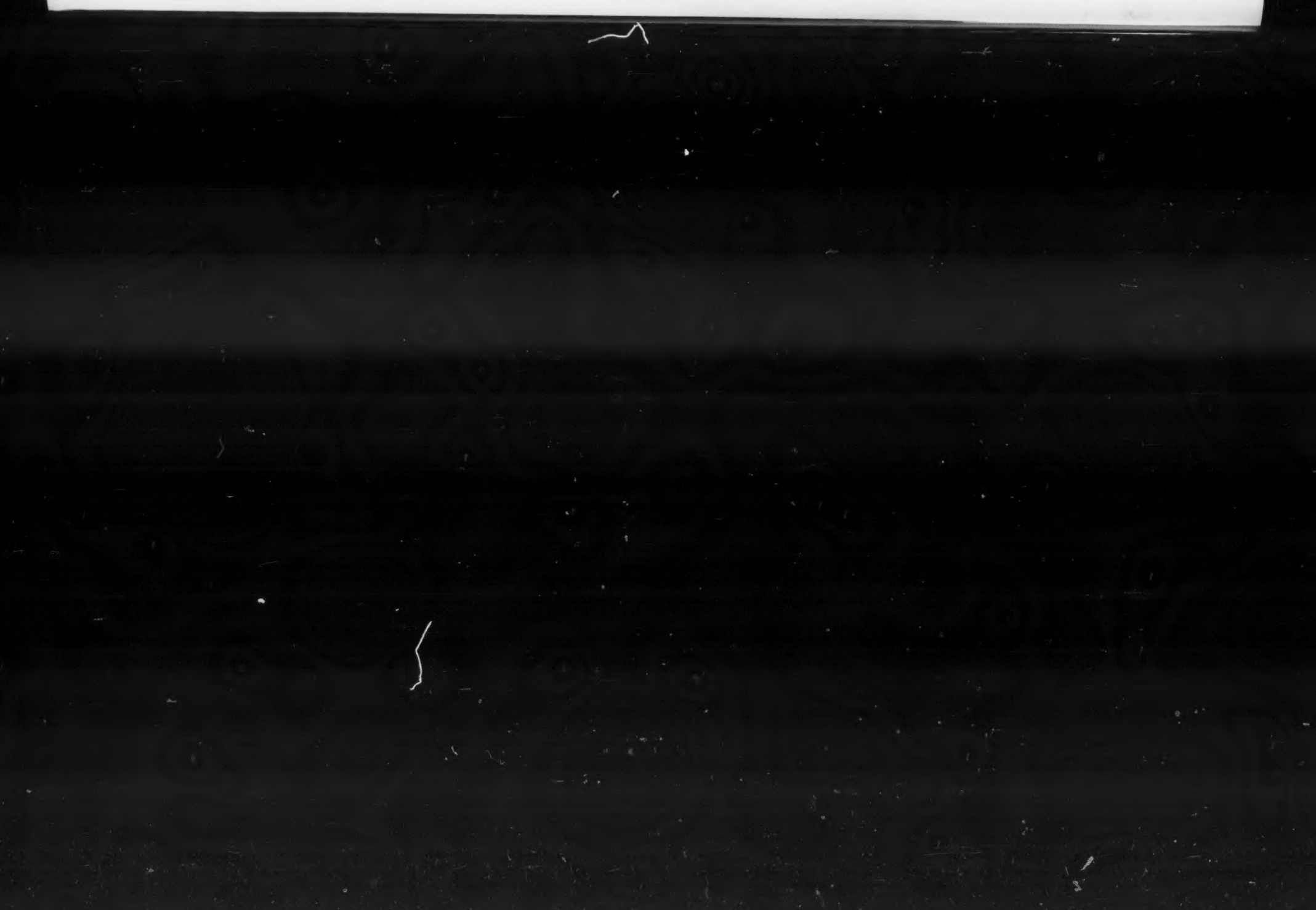
The United States patent system permits independent product claims for new pharmaceutical products, not limited to the process of manufacture. Apart from a few notable exceptions, this is not the case at the present time in numerous foreign countries, where the nature of the patent protection granted to pharmaceutical inventions is the subject of much debate and reappraisal. Extremely conflicting viewpoints have not yet been resolved as regards the basic problem—are the interests of the public best served by a broad monopoly in the product, or by a limited monopoly restricted to the product as made by the process actually disclosed?

There is a considerable amount of history involved in this situation, and it is probably simpler to start in the middle and review European ideas, particularly in the highly industrialized countries.

The limitation of protection for chemical products in general, as well as pharmaceutical products in particular, to process claims, is essentially a continental European conception, and is tied up with social thinking in the nineteenth century during the industrial revolution. It became a matter of practically unassailable dogma that if the public is to receive the benefit of new chemical or pharmaceutical products at a reasonable price and in amounts sufficient to meet the demand, this could be accomplished only by restricting the inventor to his process, so that others would be encouraged to invent new and improved processes which make the product cheaper and available in greater quantity. Probably there was also the fear that with so many closely adjacent countries, product claims would enable the manufacturer in one country to obtain effective control of the entire European market. These European ideas regarding the desirability of process limitation for pharmaceutical inventions were transplanted many years ago to numerous other regions and particularly to certain Latin American and Far Eastern countries.

The British viewpoint of the nineteenth century was different and product claims were then permitted. However, the process limitation was introduced in 1919, largely as a result of numerous broad product claims for dyestuffs obtained by German inventors before World War I and the fear of domination of the British industry by German interests. Some of the major British colonies followed suit; some did not.

(Continued on page 96)

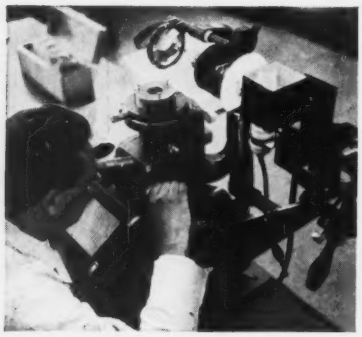


Packaging and Selling

Double-Poster Technique
of Revlon's "Say it with Rubies" nail enamel package reveals a design strategy which surmounts the usual display handicap of small packages. By combining the front and side panels of packages, a variety of novel display arrangements can be achieved. The package reproduces strikingly in visual advertising media, and the "elegance" theme effectively ties in with Revlon's magazine advertising and point-of-purchase promotion.

Achromycin Topical Spray
of Lederle Laboratories is packaged in a three-ounce aerosol. The broad spectrum antibiotic, which prevents infection in minor skin cuts and abrasions, permeates the skin rapidly and dries almost instantly, reducing the danger of stained clothing.

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.

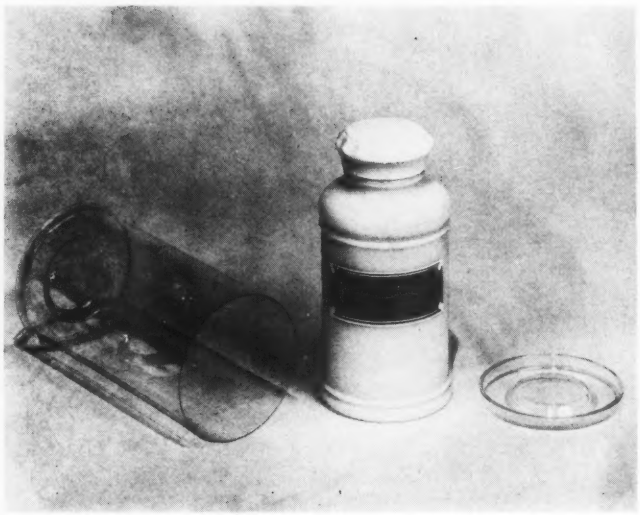
Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.

The Right Container

Versatility of facilities and talents points to Owens-Illinois as your best source of supply for a wide range of specialized needs: containers where beauty, utility and tradition are blended in the proportions required by different product classifications.

Give your product extra appeal



Drug & Cosmetic PACKAGING for 1957

by Alan Berni, F.P.D.C.

PRESIDENT, ALAN BERNI & ASSOCIATES, INC.

An unexploited drug-merchandising tactic awaits manufacturers' development in 1957. The area: product presentations for the consumer that are as exciting as those made to the professional field.

The drug industry prepares outstanding brochures, attractive packaging and dramatic promotions of its products for doctors. But when it attempts to invite sales in the drug store, it is considerably less effective.

It often offers chemical-looking bottles and pickle jars or dull boxes and tins. Most carry an oval that spotlights the maker's name, and are then "decorated" with a dozen lines of crowded type, two ruled borders, and unexpressive colors of buff, dark green, or black.

Obviously, drug manufacturers have seized the concept of impressive product presentation as a vital sales tool. And they have shown that the most prosaic pill can be dramatized. Why not, then, carry the program through?

While consumers want an authoritative "Rx" feeling in drugs, they respond actively to a friendly, less-forbidding, contemporary appeal. They are accustomed to this approach for almost every product and service they buy today. More than that, they expect it.

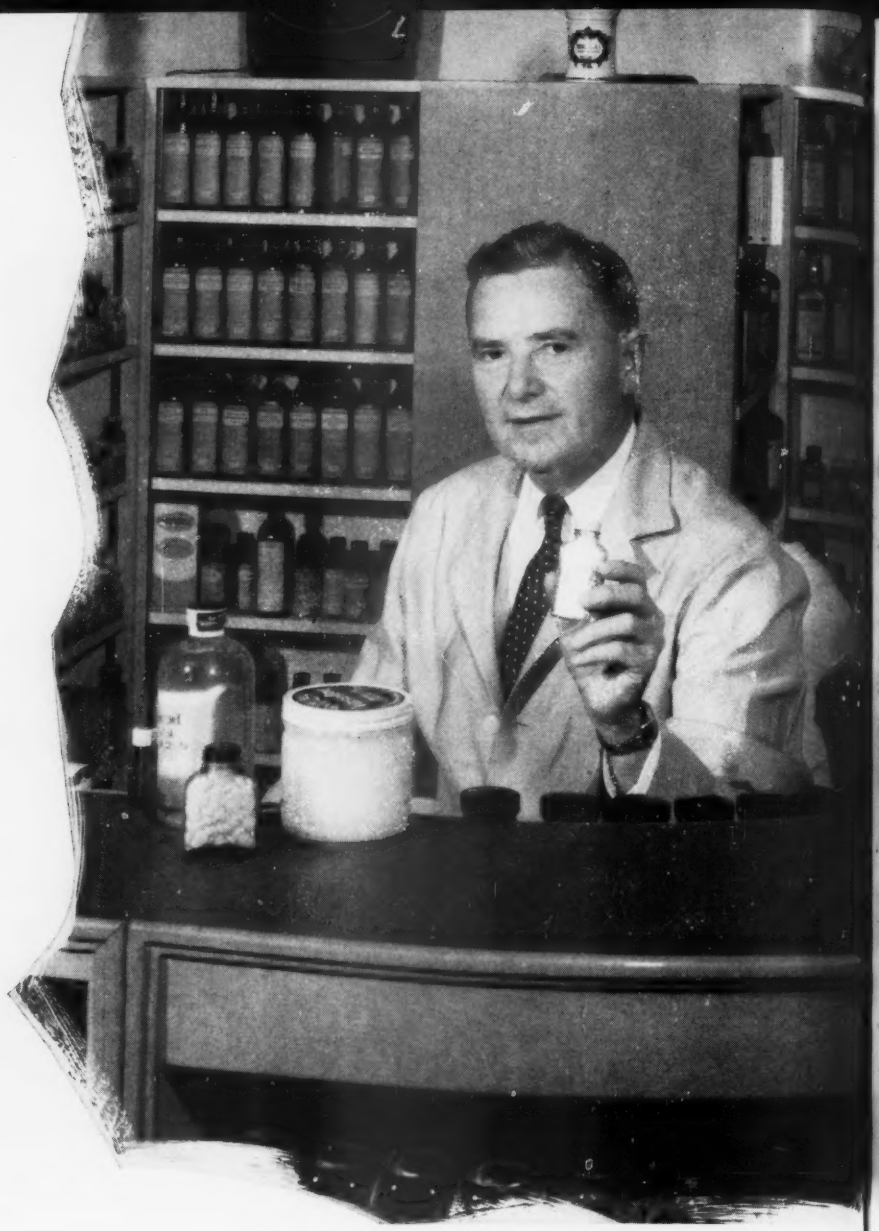
For the first time in our merchandising history, our highly knowledgable consumers look behind an advertising message. They are aware of elements that provoke their enthusiasm, provide real answers to needs, or those that portray a dull, imitative, and even hard-sell personality. The drug industry has its effective marketing tool in hand. It need do no more than use it.

"Cosmetic" Approach for Drugs?

Some drug makers have been experimenting with a fashion-glamour appeal for home remedies. Our word here is caution. Product believability must be maintained at all times. If aspirin is merchandized like bath salts, it loses its identity.

An appropriate balance, where needed, can be achieved. We recently completed such a package-merchandizing assignment for one of the country's largest pharmaceutical houses. *(Continued on page 47)*

glass containers move more drug products



Use Anchorglass® *containers sealed with* Anchor® *caps*

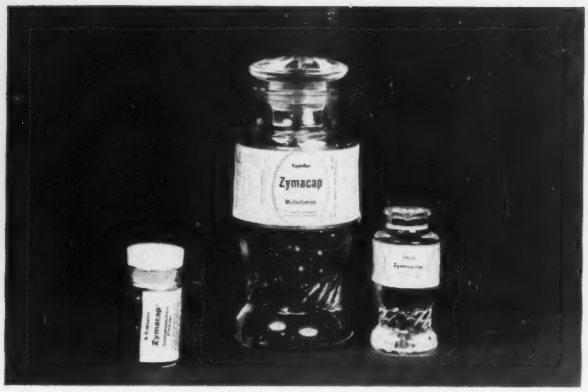
...because they protect the contents

AN important reason why consumers prefer the glass package is because the purity, strength and other qualities of the contents are fully protected. The glass container is the most sanitary package. It is made and sterilized by heat. High in chemical durability, it's inert to most products . . . cannot change them in any way. It can be resealed tightly . . . unused portions are safely stored and protected . . . purity and strength remain until the contents are entirely used. For the best in glass packaging use Anchorglass® containers, sealed with efficient, dependable Anchor® metal or molded closures.

ANCHOR HOCKING

GLASS CORPORATION

Lancaster, Ohio



The firm's product, to be newly introduced in February, was selling as a pharmaceutical lotion for ten years. Our marketing department discovered, however, that women were using it more as a beauty cream than for massage and health benefits for which it had been promoted.

Our design approach thus capitalized on the product's new cosmetic appeal to capture wider markets. But it kept enough of its existing health-aid expression to maintain current users and portray the company's well-reputed pharmaceutical character.

"Personality" Analysis for Cosmetic Merchandizing

Cosmetics that promote a beauty consultant's name make little impression on today's shopper. The number of "experts" has multiplied in the last few years.

A similar situation exists, for example, in the food industry where the Ann Pages and Betty Crockers seek the homemaker's confidence and brand loyalty. Here, however, work is being done: these corporate personalities are being researched, and analyzed. Management wants to know how the shopper sees them, whether they are believable to her, what their special—and different appeals—are, what real or imagined conceptions she has about these characters.

Interesting findings have come up: among them, women respond more readily to a friendly, helpful guide than to a "perfect" expert.

Packaging Forecast for 1957

A rebirth of industrial design in the packaging field: a return to package engineering, as well as a continuation of dramatic surface design.

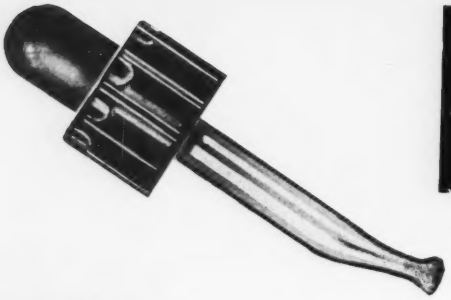
New forms, shapes and package functions will capture brand recognition and leadership, provide unique design-merchandizing concepts for each manufacturer and industry.

Packages will become part of products wherever conceivable.

Manufacturers will spend at least $15 billion in investments for 1957 packaging—three billion more than in 1956.

Closer planning between packaging consultants and advertising agencies will guide complete sales and marketing strategy for clients-in-common.

(Continued on page 49)



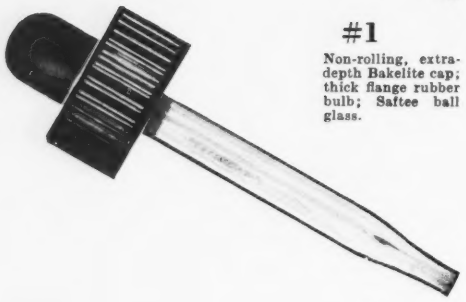
New Perfection

DROPPING PARTS

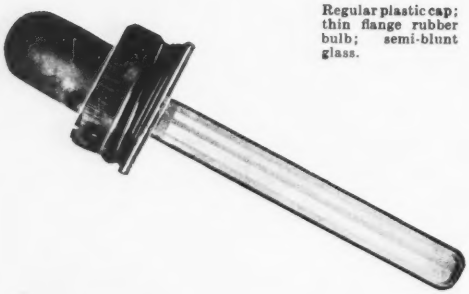
"Repeat-Sale Insurance" for Liquid Preparations

The New Perfection line of functionally designed dropping parts gives satisfaction where satisfaction counts—in the hands of the user. To make sure the customer's first reaction to your product is 100% favorable, specify New Perfection. Our rigid inspection system assures the cleanliness and uniform high quality of every shipment.

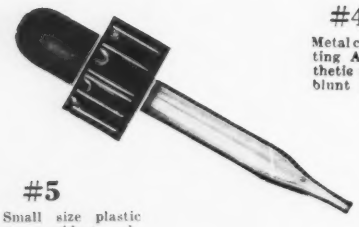
New Perfection dropping parts will fit your bottle or can be furnished in combination with our Modernistic bottles in Amber, Blue, Green or Clear glass. Bottle sizes—⅛, ¼, ½, 1 and 2 oz.



#1
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; Saftee ball glass.



#3
Regular plastic cap; thin flange rubber bulb; semi-blunt glass.



#4
Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass.

#5
Small size plastic cap; midget rubber bulb; regular straight glass.

NEW PERFECTION DROPPER GLASSES

CALIBRATED

IN COLOR

This inexpensive extra adds welcome convenience to the use of your product. Accurate calibration in any color marks the specific dosage indicated Your firm name or trade-mark may also be imprinted.

#2
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED IN COLOR).

Improved bottle shape. Designed to lie flat for convenient labeling. Front provides ample label space.

IN ADDITION to NATURAL RUBBER BULBS for GENERAL USES, WE CAN ALSO SUPPLY

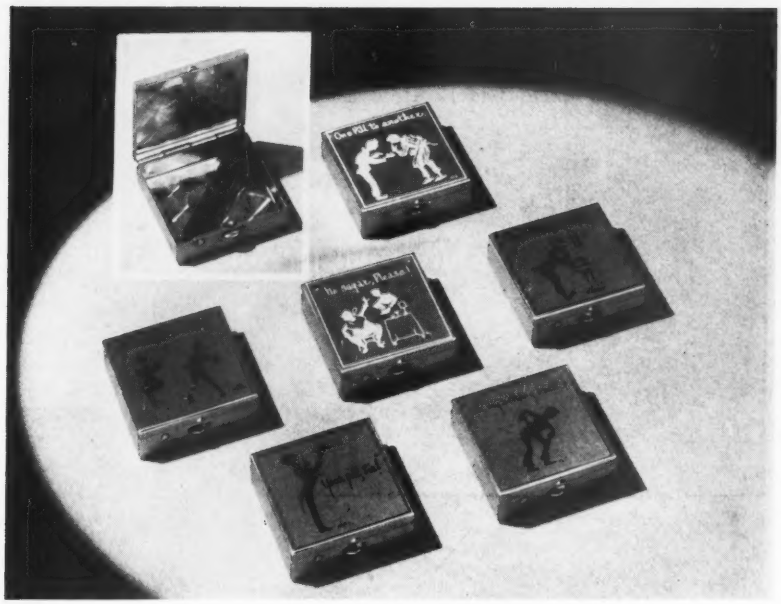
AMEKINE (OIL-RESISTING) Synthetic Rubber Bulbs

which are recommended for use with oil preparations, such as nose and ear drops and vitamin products. Even after long exposure to oil, Amekine closely retains its original shape and functions perfectly.

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.



Each industry will seek out its own unique product presentation and form: drugs and toiletries will strike appropriate balance between cosmetic-fashion and apothecary appeal.

The "package" will be described as "an integrated marketing program that wraps up everything, including the sale."

Watch department and chain stores dig into new design-merchandizing approaches to keep supermarkets from snatching away too much mass-market business.

Design Psychoanalysis

Multi-million corporations have begun to discover they have "visual personalities" and that their packages and overall promotion are either conveying a palatable character to the mass market, or not.

As a result, package designers have become big-industry psychoanalysts. They put companies on design couches to analyze, adjust, and portray their qualities to today's very knowledgeable consumers.

A Package Is No Longer a Package

Package designers are on a new binge. What should they call themselves? A package is no longer a package. It is an integrated program of total product presentation, that includes every phase of the manufacturing, shipping, inventory, stacking, display, marketing, merchandising and in-home-use process.

And a package designer operates now as marketing consultant, merchandising specialist, co-planner with advertising agencies, production supervisor, designer, engineer, and overall sales stimulator.

"Package" design is an obsolete term. It tells nothing of the full-scale marketing tactics that are now part of every packaging program.

"Industrial" design is worse yet. This conveys nothing of the consumer design angle, nor the creativity and imagination involved in every "package" design assignment.

Unexploited Area: Unique Package Form and Shape

Where is dramatic package form, distinctive for an industry, believable for a product, appropriate and functional for specific needs?

Where is the imagination and the foresight in seizing a unique form and distinctive packaging material, for example, to capture brand recognition?

It can be done. The liquor and cigarette industries have already shown the value of this thinking: distinctively styled decanters have captured new markets and powerful recognition. The fliptop box has been one of the few real package-merchandising developments in almost a decade.

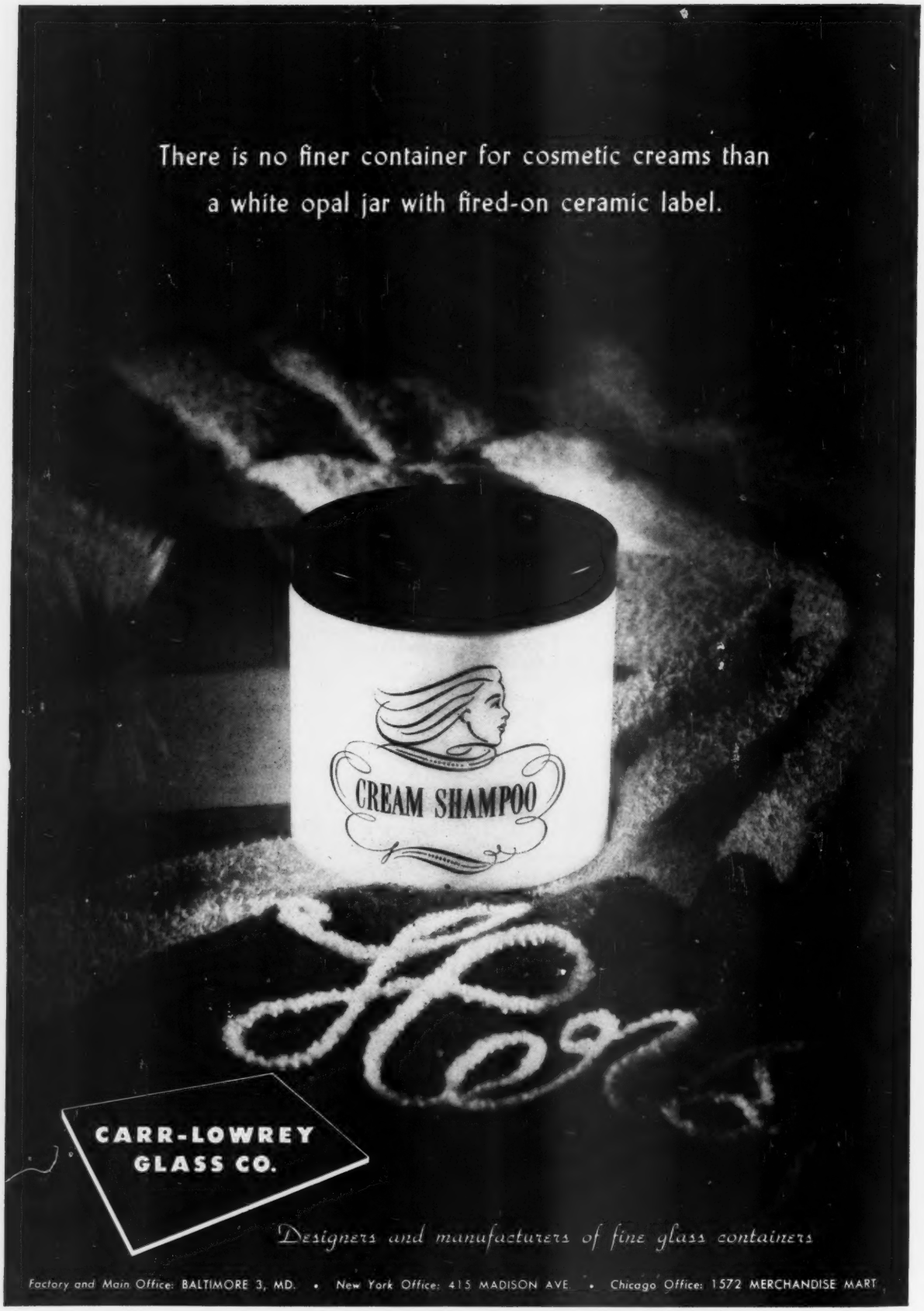
Even the near-ugly ketchup bottle, which is certainly not the most efficient package, has nevertheless an outstanding degree of distinctive, recognizable shape. Put white or green substances in a ketchup bottle and consumers' immediate reaction is: "oh, this is white—or green—ketchup!"

New Emphasis for 1957

Re-tooling to achieve better construction and unique form may even become necessary for some manufacturers. This will mean that an analysis of the complete production operation—manufacture costs, shipping, handling, etc.—will be major aspects of 1957 packaging programs.

More intelligent application of market research and package pre-testing to design development will be made. A closer association between design consultant and advertising agency strategy will result in new appeals, new concepts and new sales gains for business at large.

The concept of *distinctive and total product presentation* will key design-merchandising success in 1957.


There is no finer container for cosmetic creams than
a white opal jar with fired-on ceramic label.
CREAM SHAMPOO
CARR-LOWREY
GLASS CO.
Designers and manufacturers of fine glass containers
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 415 MADISON AVE. • Chicago Office: 1572 MERCHANDISE MART

Packaging and Selling

Potent Package

The package has many times been the primary or the exclusive reason for a cosmetic success. Among these packaging successes it seems to be that an application or a dispensing advantage or innovation is the prize to look for.

At least twice within a few years a new method of dispensing has brought leadership in the deodorant business. Everyone remembers the tremendous velocity in the increasing sales for Stopette when this deodorant product was introduced in a package combining two new intriguing and convenient features. Stopette was just about the first to use the polyethylene bottle in this industry and with this bottle it introduced the spray valve.

There have been trade rumors over the last few months that Bristol-Myers' Ban is hitting the ball in a very substantial way on the basis of their unusually convenient dispensing package.

Now we see trade ads announcing that Ban is number 1 in deodorant sales and that the dollar sales volume of Ban is greater than every other stick, every other spray, every other cream, and every other deodorant in any form.

Supported by charts, those are powerful words for a product hardly more than a year old.

Super Displays

Drug and cosmetic manufacturers who are selling through food stores will be interested in a booklet just published by the American Rack Merchandisers Institute in the Merchandise Mart of Chicago. This is a booklet which tells with illustrations every form and type of point-of-sale display that can be used in a supermarket for more effective selling. Illustrated are various kinds of bins, shopping carts, specialty floor stands, shelf merchandisers, hang-up-racks, shipping cartons, and signs.

Seeking New Markets

Marketing men are discovering so many new markets that require specialized attention today that it is very difficult to keep in sight of these new horizons.

We have had quite a period of education on the new purchasing power of the Negro market, and this year has certainly been developed in a big way to exploiting the teen-age market.

Now a new development is coming which we think is interesting. General Mills, Inc. is seeking blind homemakers through recordings. Three 10 inch discs which are free for distribution to blind homemakers contains directions for making biscuits, cake, frosting, pie, and cookie mixes. The records were prepared in cooperation with such organizations as the American Foundation for the Blind in order to make descriptive words understandable by the blind.

Selling Thru Wholesalers

Here's the way in which a drug manufacturer can help wholesalers move goods through retailers, as outlined by James E. Allen, president of the National Wholesale Druggists Association.

"The manufacturer should be selective in the products he asks the wholesaler to promote. He should avoid infiltrating his deals with products that have little consumer demand or acceptance."

This means a careful screening of slow movers, unless he is willing to pay the cost of distributing them.

"The retailer does not have an endless supply of capital. He's got to spread it among the 6,000-8,000 items he carries. If he ties it up in slow movers, he cannot buy merchandisable quantities of fast moving national brands."

Manufacturers should avoid simultaneous multiple promotions. They should select a distributor with care, "based on merit, financial backing, ability to service his line and, above all, on integrity in following the manufacturer's policies."

Salesmen should be indoctrinated by the manufacturer on the function of the wholesaler "and how to get the most value out of him," Mr. Allen told the convention.

"He should do his job at headquarters, and not leave it to his field men to waste their time and his money through trial and error."

Point-of-Sale Waste

It seems that in this country we are not alone in generating an appalling waste in point-of-sale material. We quote here from the English magazine "Scope" of November.

"The amount of beautiful printed cardboard that goes into grocers' and chemists' waste bins would, if placed end to end, stretch from here to the next Advertising Conference and knock some advertising managers and agents off the platform. Why does the retailer throw away so much expensive point of sale publicity? For the best reason in the world: he does not want it. No amount of persuasion will make him

clutter his counter if he prefers his counter uncluttered. What should the advertiser of branded goods do? Call at the man's shop, see what he does want and give it to him! Not a very profound deduction, but it still eludes a great number of people in the advertising business."

Distribution Costs

Whatever opportunity there may be for reducing the cost of distribution of packaged goods at the retail level seems to rest with the supermarket. Certainly, so far as convention speeches and business paper articles would indicate, every other branch of the retail trade is vigorously demanding a bigger discount from the manufacturer and dolefully reporting higher costs.

According to a recent report food chains have reduced gross margin and expenses by about 20 per cent since the 1929-34 period.

In a study of forty-nine food chains operating 6,500 stores during 1955 the total cost of doing business, exclusive of merchandise, took 18.1c of the consumer's food dollar.

In this report the emphasis was on increased efficiency in reducing distribution costs, with these economies more than off-setting a tripling of wages and extensive reductions in employee hours during the period between 1929 and 1955.

Cosmetics in Minnesota

Up in Minnesota they are increasing the use of the electric razor. According to the Minneapolis Star and Tribune in a survey headed "How We Live in Minnesota," the use of electric razors has jumped to 48 per cent in 1956 as compared to 33 per cent in 1953.

Again according to this survey, liquid shampoos are increasing in popularity and cream shampoos are declining. The decline in cream shampoos is from 40.8 per cent in 1953 to 28.8 per cent in 1956. During this time liquids increased from 61 per cent in 1953 to 73 per cent in 1956.

Lustre Cream still holds the edge with 36.2 per cent of the cream market. This is followed by Prell, Shasta, Modart, Mary King (Watkins), Avon, Rawleigh, Velvet Touch (Jewel Tea), Fuller, and then Helene Curtis with 1.5 per cent. This makes a substantial dent in the cream shampoo business for the house to house folks. The liquid shampoo is headed by Halo, followed by Prell, Breck, Toni, Drene, Pamper, Hudnut, and Woodbury.

Underarm deodorants are now used by 84.5 per cent of the people with 54.5 per cent using a cream, 32.6 per cent a spray or liquid, 15.1 per cent a stick, 5.1 per cent a pad, and .5 per cent a powder.

High Cost Distribution

The Super Market Institute is organizing its members to support an advertising cartoon campaign which will explain how food gets from the farm to the table. The objective of this campaign is to show the public that supermarket profits are not to blame for the high cost of foods.

It certainly is interesting that the lowest cost operator in the field of distribution is starting an advertising campaign to explain the high cost of distribution.

Selling Food Stores

Food stores will continue to increase and improve their non-food sales, but on a thoroughly selective basis. This is the conclusion of Grey Matter, in the retail edition, published by Grey Advertising Agency, Inc. Here are the qualities which a product must have to get high rating on this selective choice by supermarkets.

(1) Have high Consumption Velocity Factors, i.e., toothpaste, shampoos, razor blades, hair pins, hosiery, facial tissues, toilet paper, etc.

(2) Can be handled in a tonnage operation: staple, minimum variety of colors, types, sizes.

(3) Require almost no customer deliberation in the purchase.

(4) Are packaged with the same protection as are most food lines.

(5) Have high stock-turn potentials and require minimum space for display so as to meet supers' average quota of sales per square foot.

Word of Mouth

Plymouth marketing men have discovered a way to multiply word of mouth selling.

The company gives taxi drivers in fifteen cities a good reason to ask passengers: "Have you seen the new Plymouth yet?" When the passenger happens to be a Plymouth representative, who regularly makes the rounds, the cabbies collect $5.00.

White Collars

One of the most significant facts for market planning, it seems to us, is the new census figures which show the number of white-collar workers, as compared to their blue-collar counterparts.

White-collar workers now, for the first time, substantially outnumber the blue-collars. Statistics of the U. S. Bureau of the Census show that on April of this year there were 25.4 million persons with white-collar jobs compared with 24.9 million blue-collar workers.

This is a complete reversal of former conditions, which marketing men now face. During the 1945-56 period the number of white-collar workers has increased 45 per cent as against an increase of only 15 per cent for the blue-collar workers.

We suspect that there has been a parallel change in the market among employed women. This could have real marketing significance.

Inexpensive Mass Distribution

One of the most interesting case histories of a business success is that of Dial soap. The way in which this soap slipped into one of the most competitive closed fields in the American market to secure a substantial position, before the big soap giants hardly knew it was happening, was told a short time ago to the American Association of Advertising Agencies by an executive of the agency which handled this account.

To begin with, according to this executive, the soap industry is one of low margin and high turnover with

tremendous advertising and special promotions. At the beginning Dial found they would be quickly smothered in such a competition. For instance, Dial could only spend, at that time, a fraction of the money being spent for just Lux. At the beginning Dial did not dare reveal its goal of competition in the toilet soap field. For this reason, Dial decided upon a deodorant bath story, which meant a comparably minor soap market at that time dominated by Lifebuoy.

Although this deodorant soap market was much smaller and largely occupied by Lifebuoy, the Dial strategists did not want to clash head on with Lifebuoy. For this reason, Dial copy and art work adopted a high-fashion appeal.

At the beginning, distribution was restricted first to department stores and then just to drug stores at the relatively high price of 25c a cake.

Dial made its reputation in what could be called a highly selected class distribution, that is compared to the ultimate objective, and with a style and fashion appeal.

In 1950 Dial went national and the following moves took place with rapid succession. The high-style of advertising was dropped. The price of the soap was lowered and half price sales and other deals were offered. Dial went into radio and mass magazines. Finally Dial moved its distribution into the food stores and supermarkets.

Unfortunately, there is no basis of comparing this method of introducing a new product with the opposing method. That opposing method is a sort of Pearl Harbor on competitors, with all the artillery opening in one sudden blast. We strongly believe, however, that Dial's method of operation attained national mass distribution and national consumer reputation in a cheaper and a more secure way than by the more commonly accepted method of the wealthy package merchandisers—that is by throwing several million dollars into advertising in a short time blast to compel immediate mass distribution.

What Counts

Here's what a leading advertising agency executive thinks about an advertisement. "The headline in an ad is worth 80 cents of every $1.00 spent. Coming up with a big idea and making the brand name visible at a glance, are the two key points that the agency incorporates in every ad."

Retail Control of Quality

As a retailer, Sears, Roebuck & Company have been very successful, as a $3 billion annual volume shows, but they have not been notable as an innovator. Now we hear that Sears is planning a new policy which can have tremendous importance to those retailers who are unwilling to delegate full responsibility in selling to the manufacturer and who are even more unwilling to become an unimportant link in the chain of distribution.

We hear that Sears is setting up a system with suppliers where these suppliers will establish company approved quality and uniformity tests. At present we understand this new theory is to be applied only to their candy and bakery goods supplies.

We suspect that the standards and procedures which Sears & Roebuck is now working out for their suppliers will come as a shock, a liberal education and a substantial mutual benefit to some of their suppliers.

The thing we like about this new plan is that it does indicate one way in which a retailer can assert his independence and can gather some of the community's buying respect for his own name and his business, instead of delegating all of that buying respect to a suppliers brand.

Mabee a Trend

At this time, when there is a decline in home building, a suburban Los Angeles builder instead of advertising all of the extras that have been going into a home, has advertised that they are "bare." Economy-minded buyers have been rushing to purchase the $13,000 home, which ordinarily would have cost $16,000 with home extras. Maybe this is a trend in other business than home building. For instance, the recent extravagant gift packaging trend for liquor.

Good Salesman

Adding to the literature on the subject of whether a good salesman is born or made, City College of Business of New York straddles this subject and think they come up the ladder in both ways. Here are the characteristics of a good salesman.

1. Above average intelligence.
2. High persuasive, literary, and musical ability.
3 Low mechanical, scientific and clerical aptitude. They hate detail.
4. Strong emotional balance, manifested by self-confidence, gregariousness, and sociability.

How many salesmen do you know who qualify?

Foreshadowing

In this age of growing acceptance of market surveys and various so-called scientific ways of trying to find out what people think and why they act the way they do, forecasting for business is moving away from rigid statistics into this new field of market research.

This new method of forecasting is called "foreshadowing." During the last several months an increasing flood of this type of forecasting has been filling the press and the mails. The National Association of Purchasing Agents have applied such an opinion survey of future action as has the Federal Reserve Board and the University of Michigan. In the field of capital expenditure by manufacturers McGraw Hill Publishing has made an annual survey of the projected capital investments of business. The Department of Commerce has issued numerous statistical reports on the intention of consumers to purchase various capital goods.

Since business and economists, to a large extent, are swinging over to forecasting by market research of buying and investing expectations, this method should be accepted by laymen with a reasonable amount of respect.

However, as a publisher, we have more than once seen an advertising contract issued with enthusiastic

THE POPULAR

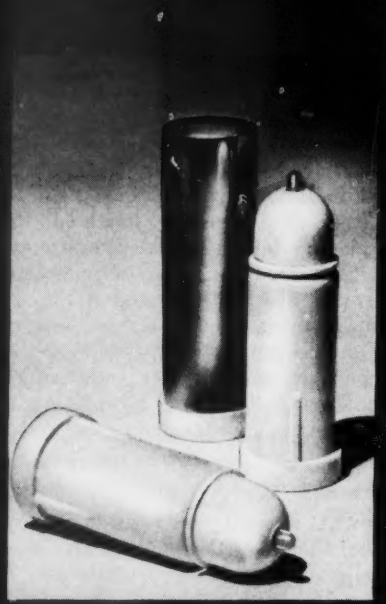
is NOW AVAILABLE IN A LARGER SIZE

because you asked for it!!!

RICHFORD

TOUCH-N-FLO*

PURSE DISPENSER



RICHFORD

CORPORATION

OFFICE & PLANT: 3618 OCEANSIDE RD., OCEANSIDE, N. Y.

SHOW ROOMS: 350 FIFTH AVE., NEW YORK

hopes for next year falter and pass out with an unexpected change in the first quarter of the contract period. We have observed that the optimistic and the enthusiastic intentions of today can falter and change without too many days passing. We also recall a comment of a department store executive when he was asked why his store did not consider making surveys on customer buying behavior. He said, "the buying behavior of the customers of my store are changing from day to day. Any survey that I made today could easily be entirely wrong next week."

The Big Frog

Here is a quote from Elwood Whitney, Senior Vice-President of Foote, Cone & Belding, in a recent speech before the National Association of Mutual Insurance Agents.

"Whatever you, as small businessmen, decide to do advertisingwise, do consistently. Sporadic advertising is a waste of time and money unless you're running a fire sale or one cent sale. If you cannot afford continuous advertising, then do as much as you can in a carefully selected time period and then get out until you can again afford to get back in. Dominate the medium to the degree that you can afford. It is better to be a big frog in a small pond. You eat better. You can always eat the other frogs."

Why Advertise?

If you happen to be one of those sometimes numerous people who advertise without knowing why, here is the explanation by a leading advertising consultant. "Doing business without advertising is like winking at a girl in the dark."

Too Much Weight

The Commerce Department has a special bulletin analyzing trading stamps. The conclusion: "A sales boost of 25 per cent is usually needed to make stamps pay."

Since the primary users of stamps are the food stores and since practically everybody in this supermarket industry is using stamps, we foresee a colossal increase in weight for the American people.

Multiple Package

One of the very interesting and significant developments in packaging has been the success of the multiple package. This has taken place primarily in the food field in such products as cereals, animal foods, soft drinks, and in many other products. These convenient and attractive multiple packages have found an interesting consumer response.

Probably a chief reason today is that a great many American women are cutting down the number of visits to the grocery store to one or two visits a week. Many factors are pointing toward a limiting of the number of weekly shopping visits, such as the availability of home deep freeze, difficulties in parking, the tremendous increase in employed women, new opportunities for enjoying more leisure, and many other factors.

Since the multiple-unit package is becoming so successful in other industries, there is certainly a very strong reason for surveying any possible opportunity for using it in this trade.

It may be that in many of this industry's staples, which are used with substantial frequency, that the multiple-unit will find a favorable response both with the retailer and with the consumer.

No Diet Here

America is supposed to be a country of super diet conscious people and calorie-fear is supposed to be growing. Nevertheless, we see that 1955 set a new dollar sales volume record for manufacturers of candy. During this year, according to the Department of Commerce, sales passed the billion dollar mark with candy sales of 2,724 billion pounds and a per capita consumption of 16.6 pounds compared with 16.5 pounds in 1954.

An indication, however, what kind of people are eating this huge volume of candy: more than half of the candy sales were accounted for by five cent and ten cent bars, penny items and novelty items. Less than eight per cent of all the sweets sold were priced at $1.00 or more per pound.

Self Service Plus

An important test will soon be made on automatic vending by one of the major supermarkets, that is Grand Union. An East Paterson, N. J. store of this chain will use a bank of eight large automatic vending machines built into the front of a rebuilt and remodeled new store. These machines will carry a variety of essential foods and will be open for business twenty-four hours of the day.

Foreign Sales

In recent years sales in foreign trade have yielded a better profit than domestic sales, according to the National Association of Credit Men.

It is possible also that the dynamic growth of sales for many manufacturers in this trade have been much greater abroad than in this country. We know of one case where a leading cosmetic company opened in a foreign country with a quota of $250,000 in sales for the first year. This quota was made at the end of the first three months.

While this is not, of course, typical, we do think that in the last few years some manufacturers in this trade have made very substantial gains abroad.

Too Tired Dogs

The newly opened Grand Union store in East Paterson, N. J. takes in 50,000 square feet. Store executives say that this store, approximately twice the size of the average supermarket, will be the store of the future in food distribution.

We hope that some day a retail food executive will give a little thought to the fact that the no-credit, no delivery supermarket is making the customer go to their store to get food. Now they are all out to make a mystic maze of 50,000 square feet of dog-tiring concrete floor for shoppers.

It seems to us that the future problem of the supermarket is going to be, "How far can we expect our food customers to tire themselves out?"

...who has the DARK HORSE in the Aerosol Race

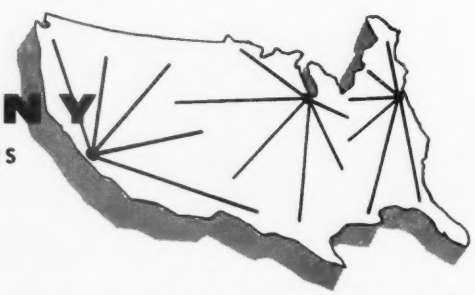
Somewhere in the pharmaceutical, cosmetic, food, chemical or specialty fields today, there are products that are not at all spectacular in their present form or package, but which if packaged as aerosols could become tomorrow's biggest sellers.

You may have such a "dark horse" in your present line.

Today, in G. Barr & Company's laboratories, a continuing, imaginative research program is being carried on to find and perfect these "dark horse" products for tomorrow's markets.

Through constant study of new propellants, new formulations and packaging techniques, we are in a position to offer a unique and comprehensive *Private Label aerosol packaging service*. Through the production of millions upon millions of successfully selling aerosol packages for clients in a wide variety of industries, we have gained experience that has established us as a leader in the pressure packaging field. Yet we market no product of our own.

If you have a product, now being marketed in a standard package, an undeveloped formula, or even the "germ of an idea," we will be pleased to help you ascertain whether it has an aerosol potential.



G. BARR & COMPANY

3601 SO. RACINE AVE., CHICAGO 9, ILLINOIS

PLANTS IN: NEW YORK • CHICAGO • LOS ANGELES

NEWS IN PACKAGING...

The Dallas sales office and warehousing operation of Crown Cork & Seal Co., Inc. has been housed in a new building at 123 Oaklawn Avenue.

Predicts Big Drug Tube Demand

Packaging of medicinal and pharmaceutical ointments and other preparations in collapsible metal tubes is expected to continue at the levels reached in 1955 and in 1956, according to the year-end forecast of Lester B. Platt, executive secretary of the Collapsible Tube Manufacturers Council. Tubes for toiletries—cosmetics, shaving creams and toothpaste—also may approach 1955 production of 695 million units, highest in the industry's history, he predicted.

"The ability of the fold-up metal tube to safeguard against product contamination and loss of potency is responsible for the substantial gains being made by this container in the pharmaceutical field," Mr. Platt said.

Another factor contributing to the demand for metal tubes in the packaging of ethical pharmaceuticals, he added, is the broadened use of strippable coatings. This new type of decoration, which can serve as a permanent label or be quickly removed for prescription sale, is estimated to be in use for 50 per cent of all tubed products in this category.

Production of metal tubes for this end-use is now more than double the 1947 annual rate, reflecting the growth in antibiotics, he explained. Although 1955 set a new output record of approximately 194 million units, production in the first nine months of this year was up eighteen per cent, indicating another new high.

Sun Tube Appointments

Claude Alexander has been appointed general sales manager of the Sun Tube Corporation and Albert Nichols has been named to the newly created post of assistant sales manager—tubes, according to Kenneth M. Leghorn, president.

Ciba Pkg. Devel. Supervisor

C. Victor Peterson has been appointed supervisor of packaging development in the method and package development division at Ciba Pharmaceutical Products Inc., it has been announced by Dr.

C. VICTOR PETERSON

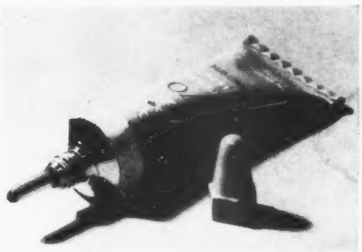
W. H. Fischer, vice-president of production. With Ciba since 1941, Mr. Peterson has worked as a supervisor of the packaging section and a junior industrial engineer in the methods and package development division.

Guild Molders Moves

Guild Molders, Inc. has moved to new and larger quarters. The sales office is located at 45 West 18th Street, New York 11, the factory on Route 22, Armonk, N. Y.

O-I Opens San Jose Office

To serve California's Santa Clara Valley for the Pacific Coast Division, Owens-Illinois Glass Co. has opened a sales office at 480 North First Street, San Jose, according to an announcement by K. C. White, vice-president and division general sales manager. Edmund K. Baloun, with O-I since 1929 and assistant manager of the company's San Francisco sales branch for the last six years, has been promoted to manager of the new office.



Avon Products, Inc. is packaging cream mascara in polyethylene eye-tip tubes developed by Wheeling Stamping Co.

House of Harley Sales Mgr.

Robert W. Proom has been appointed sales manager of the House of Harley, Inc., according to an announcement by the firm.

Relocate Richford Showrooms

The Richford Corporation's showrooms are now located in the Empire State Building, 350 Fifth Avenue, New York, according to an announcement by Paul E. Roehrich, president of the firm which recently moved its main office and warehouse activities to its own building at 3618 Oceanside Road, Oceanside, N. Y.

Other Richford sales offices include: Buckingham Associates, 7634 Rogers Avenue, Chicago; Paul M. Wagner, 4025 Glenwick Lane, Dallas; Glenn Kingham, P. O. Box 4575, Fort Lauderdale; R. G. F. Byington & Co., 1260 N. Western Avenue, Los Angeles; and Consolidated Bottle Co., Ltd., 27-67 Vine Avenue, Toronto.

Offices and warehouse of the Richford Corporation.

With this man, beauty care is a daily affair

(Dow dispatchers improve propylene glycol, U. S. P., delivery through advanced methods)

"Let 'er roll!" With this signal the day's fourth tank car of propylene glycol, U. S. P., is on its way to a cosmetic manufacturer.

Perhaps it replaces more expensive ingredients . . . that's often the case. Every day more and more formulators take advantage of propylene glycol's economy, as well as its preservative, humectant and emollient properties. And along with these advantages, customers welcome the on-time delivery an advanced distribution system brings.

A unique teletype network transmits an order in minutes through our Midland, Michigan, office to a shipping terminal nearest the customer. When loading is complete, a Dow dispatcher makes sure the load matches the order and routing is accurate.

Our dispatchers are a vital part of the forward-looking plan that guarantees today a good source of supply for the future. THE DOW CHEMICAL COMPANY, Dept. GD806H, Midland, Michigan.

YOU CAN DEPEND ON DOW

Patent THOUGHTS AND TRENDS

by Thomas Cifelli, Jr
PATENT ATTORNEY*

COLGATE PATENT ACTIVITY

While Colgate-Palmolive has of course over the years backed up its research program with patent protection, its increased patent activity during the past November may well herald a significant new trend. During that month, Colgate-Palmolive obtained no less than eight U. S. patents. Even allowing for the element of coincidence or design resulting in the issuance of the various patents within a short period, it would appear that this factor does not explain the whole story. In this connection, for example, it is noted that the subject matter of the eight patents includes dental creams, dental floss, hair dressings, liquid shampoos and detergents compositions. The reasonable inference from the foregoing would seem to be that there has been a stepped-up activity patentwise at Colgate-Palmolive.

If we are correct in our deduction it would appear that new scientific and practical developments in Colgate-Palmolive's field should be forthcoming from Colgate-Palmolive in the future at an even greater rate than has been the case in the past. This would seem to follow because, after all, patent activity is merely a reflection of research activity.

Conjecture about Colgate-Palmolive's patent future aside, a look at some of the Colgate-Palmolive's recent patents may be of present general interest.

Three of the recent patents issued to Colgate-Palmolive have been selected for consideration here, mainly because they all deal with the use of acyl sarcosides (which are present in the Gardol tooth paste). These patents are U. S. 2,772,204, 2,772,205 and 2,772,283.

First, it will be recalled that on September 14, 1954, Colgate-Palmolive received U. S. patent No. 2,689,170, relating to dental preparations containing acyl sarcosides having 12 to 16 carbon atoms in the acyl radical.

As a follow-up to U. S. 2,689,170, Colgate obtained U. S. 2,772,283, on its finding that dental creams having improved stability upon aging may be obtained by formulations comprising (1) a polishing material selected from the group consisting of calcium- and magnesium-containing polishing agents, (2) a substantially saturated aliphatic acyl amide of a saturated aliphatic monoaminocarboxylic acid compound having two to six carbon atoms, the aliphatic acyl group having about 12 to 16 carbon atoms, and less than about 15 per cent by weight based on said amide of higher fatty acid material, the amount of said material being insufficient to substantially adversely affect said amide, and characterized by (3) a calcium and magnesium ion suppression agent in an amount from about 0.1 to five per cent by weight.

U. S. 2,772,283 will therefore be seen to correspond with South African Patent 17,041, which was reported on in these columns in the September, 1953 issue of this Journal.

U. S. 2,772,204 apparently was intended to extend the protection of U. S. 2,689,170 to cover dental preparations having acyl sarcosides with 17 and 18 carbons in the acyl group.

U. S. 2,772,205 covers the use in dental floss of acyl sarcosides having from 12 to 16 carbon atoms.

It is noted that the application which resulted in U. S. 2,772,205 was fild just six days before the application which resulted in 2,772,204 (which disclosed the use of 17-18 carbon atoms acyl sarcosides). Presumably, assertions concerning the effectiveness of the acyl sarcosides having 17 to 18 carbon atoms in the acyl group when used in connection with dental floss were intentionally omitted from U. S. 2,772,205.

Foreign Patent Policy

The whole question of obtaining foreign patents is a complicated one, mainly because there are scores of countries, each issuing patents on the basis of its own laws. Consequently, what may be said for one country would not probably apply to many other countries. Any attempt to pin-point statements as applicable only to this or that country or countries would only result in confused hodge-podge. Understandably therefore, handling of foreign patents is normally entrusted to a relatively few firms in the field, commonly referred to in this country as International Patent Firms.

Nevertheless, there is a relatively simple fact, if kept in mind and applied, which would, it is firmly believed, result in a great savings in time and expense, as well as in better foreign patent protection. The suggestion: do not make the decision to file in foreign countries a last minute one but give the patent attorney enough time to determine whether any patent protection of value can be obtained.

Having made the suggestion it appears so self-evident that one may wonder why it is felt necessary to spell it out. Consider the general situation:

X files a U. S. patent application and puts off a decision on whether to file corresponding foreign patent applications for about 10 months or so. X would like to obtain the benefits of the International Convention (which means that corresponding foreign patent applications have to be filed within one year of the filing date of the U. S. case) and instructs his attorney to file in specified countries under the International Convention shortly before the expiration of this one year period. There just isn't enough time to make a study of the patentability of the subject matter in each of the foreign countries (and this is particularly important in connection with chemical, medical and food inventions), as the time taken not only in communicating directly or indirectly with the foreign countries concerned but in obtaining translations is liable to make such studies out of the question. As a result, the foreign case as filed is generally more or less a translation of the U. S. case. Then, as much as a year or two may elapse before it is learned that a foreign country will not issue a patent because the subject matter is not patentable in that country.

(Continued on page 120)

*Richards and Cifelli, Newark, New Jersey

Replica of perfume bottle used in the year 1768

SINCE 1768 the House of Chiris has dedicated itself to the Fifth Sense. In the development of Essential Oils, Floral Absolutes, Chemical Isolates, Synthetic Chemicals, and all those creations and specialties which combine industrial aromatics with natural products and produce fragrance, the House of Chiris has a cherished history. Today Chiris maintains laboratories headed by experienced chemists who have available to them not only the accumulated knowledge of generations of Chiris perfumers and chemists, but also the research facilities of five modern laboratories located in Grasse and Paris, London, Sao Paulo (Brazil), and New York City. Whether Essential Oils, Isolates, or combinations thereof, are used as fragrance constituents by the perfumery, soap, cosmetics or allied industries, we are happy to be consulted.

ANTOINE CHIRIS CO., INC

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NEWS...

Symposium on Fragrance

"What's Ahead in Fragrance?" is the topic of the Symposium on Fragrance, to be held Mar h 20 at the Essex House, New York, by the American Society of Perfumers, Inc. This is the third fragrance symposium to be held by the Society, which this year marks its tenth anniversary.

Symposium speakers will include: Camille H. Bourguet of American Aromatics, Inc., perfumer; H. C. Saunders of Givaudan-Delawanna, Inc., perfumer; Paul Bedoukian, perfume chemist; Amos Turk, odor engineer; Ernst T. Theimer of van Ameringen-Haebler, Inc.; and H. Gregory Thomas, president of Chanel, Inc.

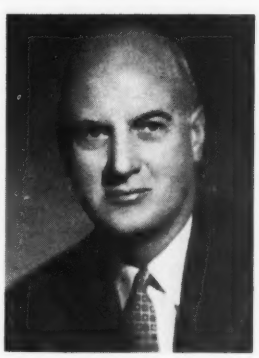
The Symposium Committee, under the chairmanship of Paul G. I. Lauffer, includes Pierre Bouillette, A. T. Frascati, Everett Kilmer, Oliver Marton, Ernest Shiftan, and Christian Wight.

Liebler Is Field Sales Mgr.

Raymond E. Liebler has been promoted to field sales manager of the Toiletries Division of Helene Curtis Industries, Inc., according to Raymond K. Myerson, general sales manager for the division. Mr. Liebler was formerly director of sales training for the division.

Baber Is Vice-Mayor

Charles G. Baber, president of C. B. Fleet Co., Inc., Lynchburg, Va., has been elected vice-mayor of Lynchburg for a term of two years.



CHARLES G. BABER

American Medical Association president Dr. Dwight H. Murray, left, presents a citation for service to the medical profession through television to T. F. Davies Haines, president of Ciba Pharmaceutical Products Inc., sponsor of Medical Horizons.

Armour Biochemistry Head

Dr. Eldon D. Nielson has been appointed head of the biochemistry department of The Armour Laboratories, E. L. Patch, general manager, has announced.

DR. ELDON D. NIELSON

Elect Munns Exec Vice-Pres.

Walter A. Munns has been elected executive vice-p esident of Smith, Kline & French Laboratories, it has been announced by C. Mahlon Kline, chairman of the board. Mr. Munns succeeds O. J. May who resigned as executive vice-president, effective December 31, 1956, but will continue to serve the company as a consultant and as a member of the board of directors. Mr. Kline also announced the appointment of Thomas M. Rauch as director of medical promotion.

Appoints Robert L. Brophy

Robert L. Brophy has been appointed director of sales and marketing of Chesebrough - Pond's (Canada) Ltd., according to an announcement by E. A. Williams, president and general manager of the firm. Mr. Brophy is a director of the Proprietary Association of Canada.

Essential Oil Assn. Slate

Elected president of the Essential Oil Association of U.S.A. is P. J. Coutin of Ph. Chaleyer, Inc. Vice-president is Gert Keller of Schimmel & Co., Inc.; secretary-treasurer, F. F. Dittrich, Ungerer & Co., Inc. The association's annual meeting and banquet was held January 4 at the Savoy Plaza, New York.

Members of the executive committee for 1957 are John Casullo of Fritzsche Bros., Inc.; R. E. Horsey, Givaudan-Delawanna, Inc.; Michael Lemmermeyer, Aromatic Products, Inc.; G. H. McGlynn, Magnus, Mabee & Reynard, Inc.; and C. P. Walker Jr., van Ameringen-Haebler, Inc. Managing director of the association is Ray C. Schlotterer.

Elect Blades Wyeth Pres.

Herbert W. Blades has been elected president and chief executive officer of Wyeth Laboratories, it has been announced by Walter F. Silbersack, president of American Home Products, Wyeth's parent company.

Mr. Blades, executive vice-president of Wyeth since 1946, succeeds Harry S Howard, who has been president for thirteen years. Mr. Howard has been elected chairman of the company.

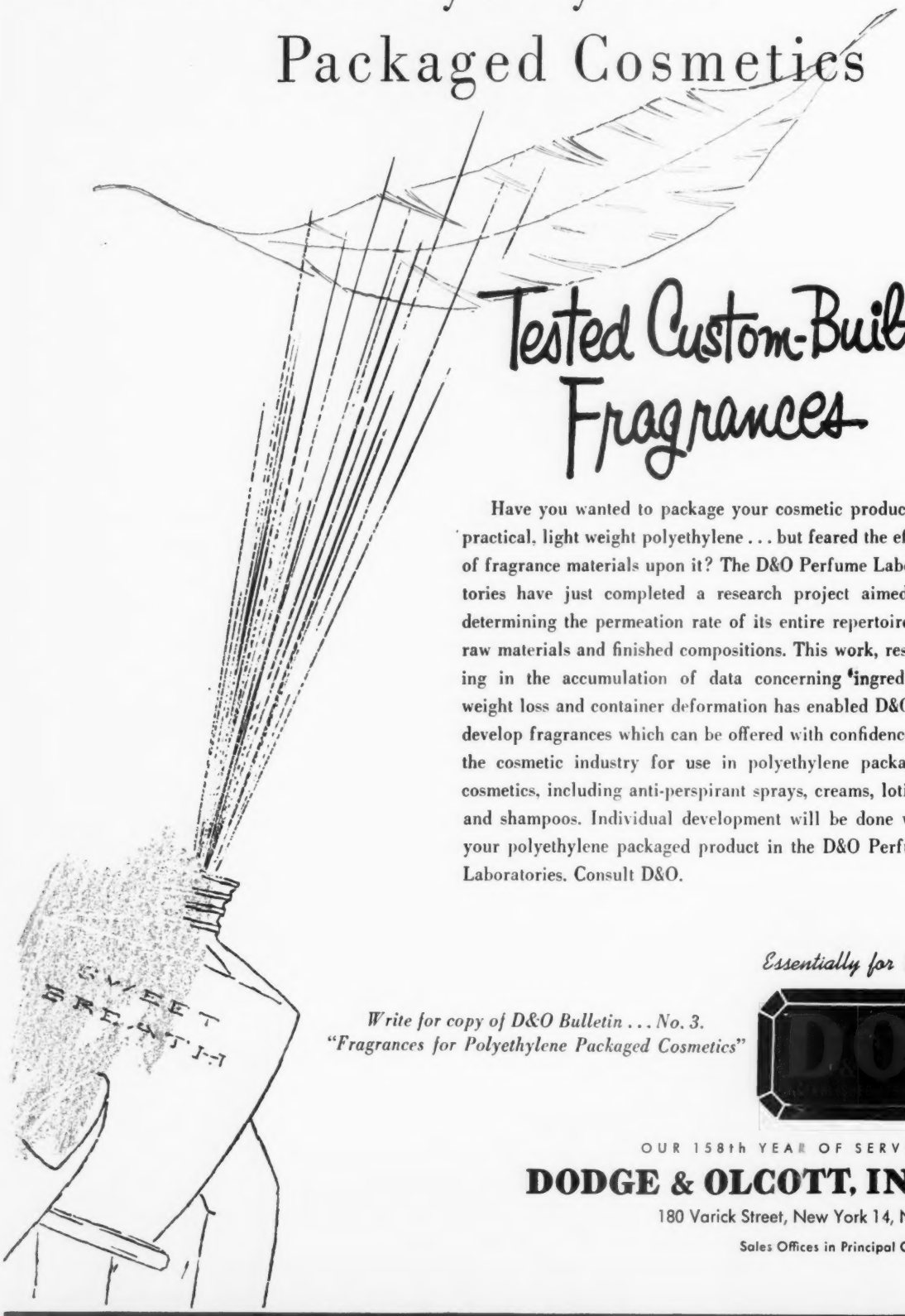
Before joining the Wyeth executive staff ten years ago, Mr Blades was assistant to the president of American Home Products Corporation for three years.

D&O Flavor Dept. Dir.

John Bouton, formerly chief flavor chemist for Synfleur Scientific Laboratories, has been appointed director of the flavor department of Dodge & Olcott, Inc. A veteran of twenty-two years in the industry, Mr. Bouton has also been associated with S. B. Penick & Company, is a member of the Society of Flavor Chemists and the Institute of Food Technologists.

JOHN BOUTON

For Your Polyethylene Packaged Cosmetics



Tested Custom-Built Fragrances

Have you wanted to package your cosmetic product in practical, light weight polyethylene . . . but feared the effect of fragrance materials upon it? The D&O Perfume Laboratories have just completed a research project aimed at determining the permeation rate of its entire repertoire of raw materials and finished compositions. This work, resulting in the accumulation of data concerning ingredient weight loss and container deformation has enabled D&O to develop fragrances which can be offered with confidence to the cosmetic industry for use in polyethylene packaged cosmetics, including anti-perspirant sprays, creams, lotions and shampoos. Individual development will be done with your polyethylene packaged product in the D&O Perfume Laboratories. Consult D&O.

Essentially for You

Write for copy of D&O Bulletin . . . No. 3.
"Fragrances for Polyethylene Packaged Cosmetics"

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ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • DRY SOLUBLE SEASONINGS

Cutter Appointments

William R. Thomas, controller of Cutter Laboratories, has been appointed director of finance in charge of all company financial activities. Stephen B. Fiske, treasurer, has been appointed secretary of the company.

Smith-Dorsey Names Klemme

Dr. Carl J. Klemme has been appointed director of pharmaceutical research and development of Smith-Dorsey.

DR. CARL J. KLEMME

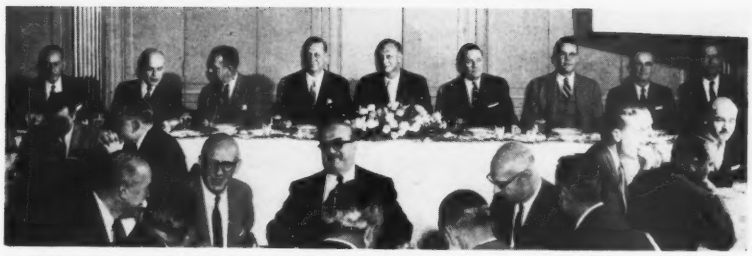
Chicago SCC Meets

The Chicago Chapter of the Society of Cosmetic Chemists at its January 8 meeting heard Paul Henry Sherrick, technical director of E. H. Sargent & Co. discuss phases of instrumentation which are pertinent for chemists in the cosmetic field.

Gustav Carsch is chairman of the chapter for 1957. Other officers are: Seymour Kornblau of Lady Esther Cosmetics, chairman-elect; Miss Theresa Bianco of Marcell Cosmetics, Inc., secretary; and Don Laiderman of the Toni Company, treasurer.

Arner Co. Ltd. Output Rise

The Arner Co., Ltd., Erie, Ontario, increased production during the first nine months of 1956 by twenty per cent above that of the same period in 1955, according to an announcement by Dr. Niels C. Klendshoj, president.



Dr. Robert A. Hardt of Hoffmann-La Roche, elected 1957-58 president of the National Pharmaceutical Council, delivered an address on "Rx Brands and the NPC" at the Council's annual luncheon. Seated at the speakers table are, left to right, Chet Shaw, executive director, Health News Institute; George Bugbee, president, Health Information Foundation; Harold G. Hewitt, president, American Association of Colleges of Pharmacy; Dr. Hardt; Carl K. Raiser; Howell Jordon, president, National Association of Boards of Pharmacy; Leroy Weidle, president, American College of Apothecaries; Dr. Robert K. Cutter, president, American Pharmaceutical Manufacturers' Association; and Sherwood E. Silliman, president, The Proprietary Association.

Allied Buys Shuttleworth

Allied Laboratories, Inc. has announced the acquisition of E. B. Shuttleworth, Ltd., which will become a division of Pitman - Moore Company. Shuttleworth will manufacture and distribute its own as well as Pitman-Moore human pharmaceutical products. Since t does not engage in the biological field, it will distribute pitman-Moore human vaccines and othe such products.

Allied Laboratories has marketed its veterinary pharmaceutical and biological products in Canada since 1947 through a wholly owned subsidiary, Pitman-Moore Company of Canada, Ltd., but acquisition of Shuttleworth marks its entry into the Canadian market with its human preparations. Pitman-Moore Company of Canada, Ltd. will continue to be its sole distributor n the Dominion of veterinary products.

John L. McKee, president of Allied, has said that the Shuttleworth manufacturing facilities wil be expanded in the near future, but the name, policies and personnel will remain unchanged.

Appointed by Parke, Davis

The appointment of J. J. Williams as regional sales executive in the Overseas Division's Western Hemisphere has been announced by Parke, Davis & Company.

Architect's drawing of the new Kansas City Branch building of Avon Products, Inc., built to meet the increased needs of this community.

Chem. Salesmen's Assn. Slate

Vincent L. Rebak of the Grace Chemical Co. has been elected 1957 president of the Salesmen's Association of the American Chemical Industry, Inc. Vice-president is Robert J. Roberts of Emery Industries, Inc.; treasurer, James E. Spencer of Harshaw Chemical Co.; and secretary, George W. Poland Jr. of E. M. Sergeant Pulp & Chem. Co., Inc.

Elected directors for a two-year term were: Jerome F. McGinty, Millmaster Chemical Corp.; L. P. London, E. I. duPont de Nemours & Co., Inc.; Stewart Cowell, J. T. Baker Chemica Co.; John Seidler, Whittaker, Clark & Daniels, Inc.; and Frederick A. Koch, The Dow Chemical Co.

MORTIMER J. FOX JR.

Fox Is Schering Vice-Pres.

Mortimer J. Fox Jr., treasurer of Schering Corporation since 1950, has been elected to the newly created position of vice-president and treasurer.

Uhe Co. Technical Director

Dr. Eric J. Reedman has joined George Uhe Co., Inc. as technical director. He was formerly in charge of the medicinal chemicals program of the International Minerals & Chemical Corp. of Chicago.

Vitamins in Pharmaceuticals

A REPORT

Use of Biotin in Multivitamin Formulae

Biotin, now firmly established as an important member of the vitamin B complex, belongs in multivitamin formulae and dietary supplements for the reasons given below.

D-biotin is required for the growth of many organisms: animals, plants, bacteria. It appears to be related to the process of cell development. Symptoms of deficiency have been shown to occur in human beings who live on diets high in raw egg white.

Deficiency symptoms appear as severe dermatitis lesions, similar to seborrheic dermatitis and a desquamating disease of infants called Leiner's disease. These symptoms, when due to a deficiency of biotin, disappear after its administration. In animals, dermatitis, loss of hair, cessation of growth of the young and sudden death of the adults may occur.

Nearly 200 papers directly related to biotin research are in the literature. The work of investigation continues.

The evidence now available points to the need for biotin in multivitamin and dietary supplements which, by their very nature, are prescribed for therapeutic and prophylactic effect.

The Place of Biotin in Antibiotic Therapy

Rat feeding experiments using some of the sulfonamides show that the animals develop biotin deficiency. The same result has been found and reported from the use of antibiotics. It has been assumed that the same development might occur in man when this therapy is used. Under the circumstances, biotin should be included in stress formulae and in multivitamin supplements which are prescribed so often during and after the administration of these modern drugs.

Usage in Veterinary Medicine

In dogs and dairy calves it has been found that a deficiency of biotin will cause a paralysis of the hind quarters. This condition was cured by the administration of the vitamin. In chicks and turkey poults a biotin deficiency, represented by a dermatitis of the feet, may be overcome by the use of biotin in the feeding formula. A substantial increase in hatchability was found when hens were fed a ration known to be rich in d-biotin.

This evidence indicates that biotin has a definite place in veterinary medicine and animal nutrition.

Technical Data

Empirical Formula ..... $C_{10}H_{16}O_3N_2S$

Molecular Weight 244.3

Slightly soluble in water and 95% alcohol. Insoluble in ether, acetone and ethyl acetate. Soluble in d-panthenol.

Thermostable in dry crystalline form.

Not sensitive to light.

Not affected by reducing agents that may be present in polyvitamin and other pharmaceutical preparations.

The brilliant Roche synthesis of 1946 makes biotin readily available in pure form at a relatively modest cost.

Roche, a world leader in vitamin research and production, has a wealth of information about biotin. Skilled technical people are ready to help you incorporate biotin 'Roche' in your preparations.

New Edition of Brochure

Send now for your personal copy of the Roche technical brochure about d-biotin. Second edition is now available, complete with survey of recent literature and up-to-date bibliography. Ask your Roche salesman or write the Vitamin Division, without obligation.

"Vitamins in Pharmaceuticals" reports are published from time to time by

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ADACIOM Officers

Officers and executive committee members for 1957 of the Associated Drug and Chemical Industries of Missouri, Inc. were introduced at the organization's Fourteenth Annual Christmas Party, held December 12 at the Hotel Chase in St. Louis. President of the group for this year is A. L. Seeks of The Puro Company, Inc.

First vice-president is E. Ted Mann of The Dow Chemical Company; second vice-president, Leo G. Peck, Peck's Products Company; third vice-president, Robert F. Walsh, Harry A. Baumstark & Co.; secretary, Starling C. Gansner, Cole Chemical Company; treasurer, J. Louis Lanz, consultant and manufacturers agent.

Elected to the executive committee were: George W. Barth, Owens-Illinois Glass Company; William Carpenter, Columbia-Southern Chemical Corp.; Robertson B. Clark, Mallinckrodt Chemical Works; G. Kenneth Robins, G. S. Robins & Company; W. D. Vesey, Merck & Co., Inc.; and Phil Yates, Marvin Yates Company.

Serving on the executive committee with the above-mentioned are past presidents of ADACIOM.

Antell Exec. Vice-Pres.

Sol Sandler has been appointed to the newly created position of executive vice-president of Charles Antell, Inc. George Kreis, formerly Eastern manager, is the new assistant sales manager. Morris Bark has been named sales manager of Pacific Coast territories, and Robert Lewis will be in charge of Mid-Western sales territory.

Folsom Vice-Pres. of Sterling

Victor C. Folsom, foreign counsel of Sterling Products International, Incorporated, has been elected vice-president of the company, it has been announced by David M. Corcoran, president.

PAUL CAREY

J. T. McAloon of E. R. Squibb & Sons, left, at a dinner honoring his twenty-fifth anniversary with the company. With him is W. L. Arscott, vice-president and director of sales.

N.Y. Bd. of Trade Elects

Robert B. Magnus, vice-president of Magnus, Mabee & Reynard, Inc., was re-elected vice-president of the New York Board of Trade for another one-year term at the 84th annual NYBT election. Lloyd I. Volckening, president and board chairman of Ivers Lee Company, was elected a vice-president of the NYBT.

Schering 15-Year Employees

Vice-President Herman W. Leitzow was among eighteen Schering Corporation employees who received fifteen-year awards at the recently held Annual Service Award Dinner.

Included in the eighteen were John Byrne, director of personnel; Ralph Najarian, advertising manager; Dr. Sibylle Tolksdorf, biochemistry; and Richard Pheasant, new product research.

Mich. Chemical Assn. Slate

The Chemical and Allied Industries Association of Michigan has elected J. Glen Hicks of Monsanto Chemical Company as president of the association for 1957. Other newly elected officers are:

Vice-president, Wayne E. Luff of Mallinckrodt Chemical Works; secretary, Daniel F. Bradley of Shell Chemical Company; and treasurer, Bruno Gheradini of J. T. Baker Chemical Company.

L&F Promotes Two to V.P.

Election of Paul Carey and James M. Boohecker as vice-presidents of Lehn & Fink Products Corporation has been announced by Edward Plaut, president. Mr. Carey remains general manager of Tussy Cosmetiques, and Mr. Boohecker, general manager of Dorothy Gray, Ltd.

General Mills Buys Protex

General Mills, Inc. has purchased Protex, S.A. of Mexico City, according to an announcement by C. H. Bell, president of General Mills. Protex produces steroid hormone intermediates from the root of barbasco.

"For several years," Mr. Bell said, "General Mills has been producing steroid intermediates at its plant in Kankakee, Ill., and this operation will continue. Protex products differ chemically from those we now make and are widely used by pharmaceutical producers of cortisone and related hormones. They will strengthen and broaden General Mills' position as a supplier to the pharmaceutical industry."

George Kent, who has served as consultant to General Mills on chemical operations since 1954, has been appointed general manager of Protex.

News of the Protex purchase was accompanied by an announcement that Dr. Arthur Odell has joined General Mills to direct steroid research.

Popper Export Salesman

The appointment of Miguel Rodriguez to the export sales staff of Popper & Sons, Inc. has been announced by George A. Popper, export manager. Mr. Rodriguez has sold surgical supplies and drug and cosmetic packaging equipment for many years.

After completing a factory training course in PerfeKtum products, he will be assigned to Popper's Latin American Division and will travel extensively in the Western Hemisphere.

Nat. Aniline Plant Mgr.

Louis C. Goode has been appointed plant manager of the Moundsville, W. Va. plant of National Aniline Division, according to an announcement by M. A. Conner, vice-president. Mr. Goode succeeds the late Ross M. Sims.

JAMES M. BOOHECKER

The World Comes to *Kolmar*

FOR PRIVATE-LABEL COSMETICS

Kolmar is world renowned as producers of many of the world's famous cosmetics . . . originators or leading producers of Vita-Cos, Gold Digger and other now-famous products such as the Non-Smear Lipstick, The Kolmar Continental Lipstick, Liquid Make-ups, and many others.

On the North American Continent, Kolmar has 5 strategically-located manufacturing plants — Port Jervis, New York; Milwaukee, Wisconsin; Hollywood, California; Barrie, Ontario, Canada; Mexico, D. F. Kolmar also has plants in France and Australia, with sub-plants planned for England, Germany and India.

Kolmar produces virtually every conceivable type of cosmetic

We will gladly consult with you in developing products to meet your specific requirements. Write for Brochure picturing and describing our Research Center at Milwaukee.

REPRESENTATIVES: DOUGLAS HAGGERTY; THOMAS LA PRELLE, EASTERN SALES MANAGER, EMPIRE STATE BLDG., ROOM 605, NEW YORK, N. Y.; WARREN M. CURRY, 599 PLUM STREET, N. W., ATLANTA, GA.; NORMAN L. KOLE, 505 NORTH LA SALLE STREET, CHICAGO, ILL.; J. C. WEILER, 8003 FORSYTHE BLVD., ST. LOUIS 5, MO.; R. F. G. BYINGTON, 1260 N. WESTERN AVENUE, LOS ANGELES, CALIF.; RICHARD F. SPICKER, 419 W. FIFTH STREET, CINCINNATI, OHIO
F. GILBERT McNAMARA, 226 FULLER ST., WEST NEWTON, MASS.

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CANADA: KOLMAR WILCKENS, LTD., PLANT IN BARRIE, ONTARIO; AUSTRALIA: KOLMAR (AUST.) PTY. LIMITED, 494 KENT ST., SYDNEY; KOLMAR EUROPE: PARIS, FRANCE; KOLMAR de MEXICO, S. A.; MEXICO, D. F.

U.S. Rep at Int. Symposium

A representative of the United States at the Second International Symposium of Synthetic and Natura Perfumes and Cosmetology, held recently in Paris, was Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc.

Before an audience which included many leaders of the French perfume and cosmetic industries and of the Grasse essential oil Industry, Dr. Guenther presented a color motion picture describing essential oil and flower oil production in Southern France, Spain, Algeria, Morocco, Austria and Italy, including Sicily.

During a three-week stay in Europe, Dr. Guenther divided his time between Germany and France.

Colton Chicago Sales Engr.

William A. Freiwald has been appointed sales engineer of Arthur Colton Company's Chicago office, it has been announced by W. A. Doepel, sales manager of the company.

D'Aigremont Visits S.A.

Jacques d'Aigremont, president of Roure-Dupont, Inc., made his annual business trip to the major South American countries.

NYSCC President-Elect

The New York Chapter of the Society of Cosmetic Chemists has elected Harry Isacoff, of van Ameringen-Haebler, Inc., as president-elect of the chapter.

Dragoco's Dr. H. K. Thomas, left, welcomes Dr. S. Sabetay at the IVe Salon de la Chimie-Caoutchouc Matieres Plastiques, held recently in Paris.

Givaudan-Canada Moves

The offices of Givaudan-Canada Ltd. have been moved to new, modern and enlarged quarters at 214 Merton Street, Toronto 7, Ontario. The telephone number is HUdson 8-0133.

Pennsalt Has New Ind. Div.

The Pennsylvania Salt Manufacturing Company has consolidated its Sharples operations with those of its Industrial Chemicals Division, William P. Drake, president, has announced. General manager of the new unit, which is known as the Industrial Division, is Hugh C. Land, formerly general manager of the Industrial Chemicals Division.

Parenteral Assn. '57 Slate

L. James Graham of Burroughs-Wellcome & Company, Inc. (U.S.A.) has been re-elected president of the Parenteral Drug Association for 1957, according to an announcement. Other officers elected were:

Vice-president, Dr. Harold Blumberg, Endo Laboratories, Inc.; regional vice-president, Harold Dembo, Chicago Pharmacal Company; secretary, Hubert E. Boyden, William H. Rorer, Inc.; and treasurer, Joseph W Kouten, Carroll Dunham Smith Pharmacal Co.

Elected directors of the association for two-year terms were William S. Bucke, Lafayette Pharmacal Inc.; Raymond W. Barton, Mead Johnson & Co.; and Walter S. Konwiser, C. F. Kirk Co.

Appointed Schering Chemist

Dr. Robert G. Shaheen has been appointed a chemist in the pharmaceutical chemistry department of Schering Corporation. He was formerly assistant professor of pharmacy at Duquesne University.

Sfiras Ends U.S. Visit

Jean Sfiras, director of technical research of the Ets. Roure-Bertrand Fils & Justin Dupont, Argenteuil, France, recently completed a month's stay in the United States.

In keeping with more than a hundred years of tradition, Mr. Sfiras brought to the technicians of Roure-Dupont, Inc. new achievements of his department's discoveries and the application of these new aromatic processes and creations to the various fields of perfumery, cosmetics and industrial products.

At the annual Christmas party of Givaudan-Delawanna, Inc., E. R. Durrer, president of the company, extreme right, presents gold watch to Simon Bigoss of the Delawanna plant, who has been with the firm twenty-five years. Similarly honored was Theodore Bumiller, center, a perfumer at the New York Laboratories. Looking on are H. F. Duffy, treasurer of the company, extreme left, and Dr. Max Luthy, vice-president in charge of production.

Representatives of the Philippine drug industry on a six-week tour of leading pharmaceutical firms in the United States, under the auspices of the International Cooperation Administration, take time out from their visit to four of the New Jersey plants of S. B. Penick & Company to have luncheon at the Hotel Essex House, Newark. Shown in the photograph, left to right, are: Jose A. Angeles, general manager, Lexal Laboratories; William F. Wickham, assistant export manager, Penick; Primo S. Arambulo Jr., associate pharmacist, Arambulo Products, Inc.; Carlos Lopez, vice-president in charge of foreign department, Penick; Isosceles S. Pascual, general manager, Pascual Laboratory; A. J. Dotres, export manager, Penick; Dr. Dalmacio T. Suaco, vice president and general manager, A. T. Suaco & Company, Inc.; Edward H. Ayling, Jersey City manager, Penick; Orlando C. Buan, cost accountant, Philippine American Drug Company; Lawrence S. Driever, personnel director, Penick; and Eduardo Pinol, general manager, Oceanic Commercial, Inc.

Merck Personnel Director

John J. Radigan has been appointed to the new corporate staff position of director of personnel relations of Merck & Co., Inc., it has been announced by John T. Connor, president of the company.

Joins Warner-Chilcott

Dr. Richard X. Sands has been appointed director of clinical investigation for Warner-Chilcott Laboratories, it has been announced by Dr. Leonard A. Scheele, president. Dr. Sands will share duties with Drs. Ernest Blanchard and Daniel Johnstone, also assistant directors of clinical investigation. The department is headed by Dr. Walter Hoskins.

Cyanamid Appoints Rushkin

Jerrold H. Rushkin has been appointed general manager of the Fine Chemicals Division, American Cyanamid Company, according to Kenneth C. Towe, president.

Janovsky Joins Fritzsche

Harold L. Janovsky has been appointed chief flavor chemist of Fritzsche Brothers, Inc., replacing Dr. Edmund H. Hamann who has retired. Dr. Hamann has been retained as a flavor consultant.

With an industry background of twenty-two years in the chemistry of beverage and food flavorings and essential oils, Mr. Janovsky has had almost a year's service as director of the Flavor Division of Dodge & Olcott, Inc.

JOHN J. RADIGAN

Polak's Frutal Works Meeting

All United States and Canadian representatives attended the annual sales meeting of Polak's Frutal Works, held December 10 to 12 at the firm's plant in Middletown, N. Y. A dinner was held at the Orange County Golf Club on December 11. The firm also held the Christmas party for its employees at the club.

Grove Buys Harrison Products

Grove Laboratories, Inc has bought Harrison Products, Inc., makers of "NoDoz Awakeners." In announcing acquisition of the company through 100 per cent purchase of stock from present owners, James H. Grove, president of Grove, said that the San Francisco firm would be operated as the Harrison Products Division of Grove Laboratories.

"The purchase of Harrison Products is a phase of our program of diversification which we are carrying out both through introduction of new products via our present companies as well as acquisition of new products of other companies," said Mr. Grove.

Manufacture of present Harrison Products will be transferred to Grove's St. Louis headquarters. Several Harrison Products executives and employees will continue with the firm under the new management.

Marsh Is V.P. of C and C

J. Lee Marsh, Ph.D., has been appointed vice-president—development of Carbide and Carbon Chemicals Company, i has been announced by D. B. Benedict, president of the division. Dr. Marsh will be responsible for the development department of the company as well as for all phases of its textile fibers activities.

With Carbide and Carbon since 1933, he was director of engineering for the company at the time of his present appointment.

Wixted Chrmn. of PI Group

Edward M. Wixted, industrial engineering manager of Schering Corporation, has been appointed chairman of the Eastern sub-committee of the production line committee of the Packaging Institute for 1957.

The field staff of Charles Antell, Inc. at the company's annual sales meeting, held in Baltimore. Jack Rosen, center, president, and Sol Sandler, right of Mr. Rosen, announced that all sales quotas had been exceeded.

LEON GEFEN

Gefen at Felton Meetings

Leon Gefen, director for the past six years of the Versailles Manufacturing branch of the Felton Chemical Co., Inc., attended Felton's annual year end meetings in New York. Mr. Gefen also acts as general purchasing agent of continental essential oils and natural aromatic products for the Felton organization.

A captain in the French army during World War II, he was wounded three times and earned a citation from General Eisenhower at the 1944 landings in Southern France.

Joins Carbide and Carbon

Gordon W. McBride, chemical engineering consultant, has joined the Washington, D. C. staff of Carbide and Carbon Chemicals Company, it has been announced by John A. Field, vice-president of the company. Mr. McBride, as technical co-ordinator, will provide liaison between the company and government research agencies and laboratories.

Jutal Succeeds Barry

Dr. Bernard B. Jutal has been named director of the pharmaceutical chemistry research department of Schering Corporation to succeed Dr. Richard Barry who was named vice-president and scientific research director of Union Pharmaceutical Company, Schering affiliate. The announcement was made by Robert E. Waterman, vice-president of Schering.

Dr. Jutal was formerly assistant director of pharmaceutical research for Merck-Sharp and Dohme Research Laboratories Division.

Armour Plans 90 More Reps

Plans to add 90 men to the medical service representative staff of The Armour Laboratories have been announced by E. L. Patch, general manager. The Veterinary Division also is expanding its field force.

Witco Promotes Wagner

Dr. Edward F. Wagner has been appointed to the newly created position of manager of development of Witco Chemical Company, according to an announcement by Max A. Minnig, president of the firm. Dr. Wagner was formerly director of Witco's technical service laboratory in Chicago.

In his new post, Dr. Wagner will develop and carry out an overall program designed to broaden the manufacturing activities of Witco and its subsidiaries, Emulsol Chemical Corp. and Ultra Chemical Works.

To assist in this expansion program, a development committee was organized with Dr. Wagner as chairman. Other members are Dr. M. M. Gladstone, manager of technical service for Emulsol, and Albert Sharphouse, executive vice-president of Ultra.

DR. EDWARD F. WAGNER

Mead Johnson Appoints

Orrin M. Ernst has been appointed marketing planning manager of Mead Johnson International.

Thomas Leeming & Company, New York City manufacturer since 1881, was honored by the City of New York in a 75th year birthday ceremony at which Richard C. Patterson, right, Commissioner of the Department of Commerce and Public Events, New York City, presented the company with a certificate of merit. Accepting on behalf of the company is Edward B. Austin, president of the firm.

CLAUDE FORTER

Shulton Int. Div. Adv. Mgr.

Claude Forter has been appointed advertising manager for the International Division of Shulton, Inc., succeeding William Malton who recently resigned. Prior to joining Shulton, Mr. Forter was an account executive with the Grant Advertising Agency, New York City; previously, he was assistant manager and account executive of Grant's Bogota, Columbia office.

Re-appointed FWDA Treas.

Rudolph P. Neptun, vice-president in charge of field sales at the New York Quinine & Chemical Works, Inc., has been re-appointed treasurer of the manufacturers' section of the Federal Wholesale Druggists Association.

Ungerer Sales Force Meets

The entire sales force of Ungerer & Company, including the head of the Ungerer Paris office, attended a sales meeting November 14 to 16 at the firm's New York office and heard Kenneth G. Voorhees, president, outline future plans of the company.

W. A. Bush, secretary, presided over the sessions. Speakers included vice-presidents William H. Dunney Jr., who covered the creative phases of perfume compounding; Ivon H. Budd, who discussed sales; and George V. Branigan whose subject was quality control. Roy Hagelin conducted a discussion of Exchange Brand Oils which Ungerer is distributing for Sunkist Growers of California.

On the last day of the meeting, the sales force was conducted on a tour of the Ungerer plant in Totowa, N. J., where Dr. Althausen explained the special features of new equipment and outlined various production techniques. Fred Schumm, manager of the flavor department, discussed the latest developments in the flavor field.

Jasmonis

King of the Jasmin Specialties

A unique and outstanding Givaudan creation, JASMONIS reigns supreme as a jasmin specialty.

It blends beautifully with natural jasmin, enhancing its strength and exalting its freshness and top note.

Used alone in the creation of a new perfume, it not only provides a fragrance of true jasmin quality but adds a fresh and original note of its own.

Seldom has any specialty enjoyed such wide and enthusiastic acceptance...for originality, high quality and consistent uniformity. We invite your inquiries regarding JASMONIS.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

Isodine Brand Manager

Charles T. Rosen has been named brand manager of the Isodine Pharmacal Corporation, according to an announcement by W. O. Heinze, president of International Latex Corporation, parent company of Isodine Pharmacal.

Mr. Rosen has been a member of the sales force of International Latex since joining the Family Products Division a year ago.

Elected Warner-Lambert Dir.

William S. Lasdon has been elected a director and member of the executive committee of Warner-Lambert Pharmaceutical Company, according to an announcement by Alfred E. Driscoll, Warner-Lambert president, who also stated that John S. Hewitt will continue as president of Anahist Company, formerly a Nepera Chemical Company subsidiary. Both Mr. Lasdon and Mr. Hewitt are former officers of Nepera, which has been acquired by Warner-Lambert.

Mallinckrodt Names Bradshaw

G. C. Bradshaw has been appointed general purchasing agent of Mallinckrodt Chemical Works, according to an announcement by Joseph Fistere, president of the company. Mr. Bradshaw succeeds Erwin H. Doht, who died suddenly November 25.

With Mallinckrodt since 1925, Mr. Bradshaw was sales manager of the company's Western Division from 1947 to 1954, at which time he was named director of sales research.

Chemway Acquires Carac

Chemway Corp. has acquired The Carac Corp., Freeport, N. Y., manufacturer of insecticides, fungicides, weedicides and fertilizers for home gardens, according to an announcement by Charles T. Silloway, president of Chemway.

Parke, Davis Res. Ctr. Site

Parke, Davis & Company will build its $10,000,000 medical research center on a site in Ann Arbor, Mich., near the University of Michigan campus. The center is expected to be completed by early 1959.

Proximity to the firm's Detroit headquarters, accessibility by air and land, and availability of the university's cultural and educational facilities were factors in selection of the site, according to Harry J. Loynd, president of Parke, Davis.

Eckman Elected Vice-Pres.

John W. Eckman has been elected vice-president of Thos. Leeming & Co., Inc. Formerly manager of the professional products division, he will continue his responsibilities in this area.

Amic Returns to Paris

Louis Amic, president of the Ets. Roure-Bertrand Fils & Justin Dupont, Paris, has gone back to Europe by way of Morocco, after a month's stay in the United States.

LOUIS AMIC

G. C. BRADSHAW

Stevenson Joins Schering

Michael F. Stevenson has been appointed assistant merchandising manager in the International Division of the Schering Corporation, according to an announcement by W. H. Conzen, manager of the division. Prior to his joining Schering, Mr. Stevenson was with the Norwich Pharmacal Company as assistant export manager.

Adolf K. Barta

Adolf K. Barta, secretary-treasurer of the Proprietary Association, died suddenely December 7 at the Leesburg, Va. hospital. He was 57 years of age.

Mr. Barta joined the staff of the Proprietary Association in 1940 and became secretary-treasurer in 1945. A member of the Washington, D. C., Bar and the district's board of trade, he also belonged to Sigma Nu Fraternity, the New Jerusalem Lodge No. 9 of the Masons and was the first president of the Aero Club of Washington. He was fiscal consultant to the House Appropriations Committee for ten years.

He is survived by his wife, Mrs. Ruth S. Barta, and his mother, Mrs. Julia Barta, both of Sterling, Va.

William H. Robinson

William H. Robinson, sales manager of McKesson & Robbins Laboratories, died December 10 at the age of 55. He joined the firm in 1939

Theodore Seltzer

Theodore Seltzer, president of Bengue, Inc., manufacturers of Baume Ben-Gay and other products, died December 31 in French Hospital, New York, after a long illness. He was 86 years old.

A French-born American citizen, he served in the French Army before coming to the United States in 1891. Employed for a time by the French Line here, he arranged in 1898 for the manufacture of Baume Ben-Gay in the United States. When Bengue, Inc. was formed in 1939, Mr. Seltzer became its president and director. He was also vice-president and director of Pacquin, Inc., and of the Commonwealth Trust Company, Union City, N. J.

A Commander of the French Legion of Honor, he also held office in numerous French associations in the United States.

He is survived by a daughter, Mrs. Ernest Keuneke of East Orange, N. J., and two sisters, Mme Lucie Gattepin and Mme Eugenie Tonnet, both of Sedan, France.

John F. Shea

John F. Shea, 51, vice-president in charge of sales for the Becco Chemical Division of Food Machinery and Chemical Corporation, died November 26 at the Roswell Park Memorial Institute, in Buffalo, after a long illness.

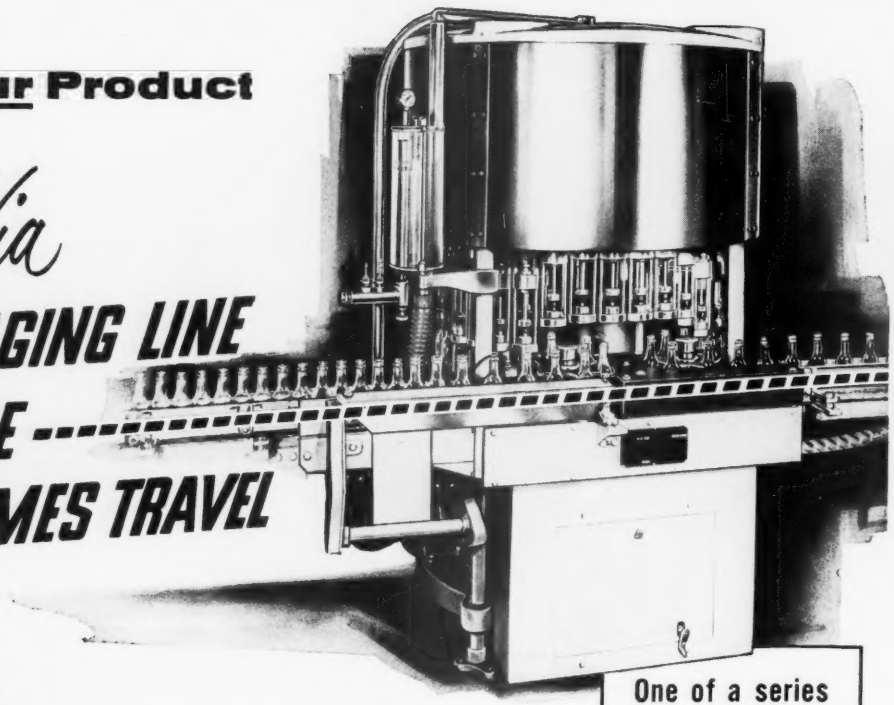
Born and raised in Fitchburg, Mass., he received his technical education at the Lowell Textile Institute, Lowell, Mass., joined Becco in 1930, serving first as a field representative and later as manager of the New England territory. When he was promoted to sales manager for the company in 1953, he moved to Buffalo. In 1955 he was elected vice-president in charge of sales.

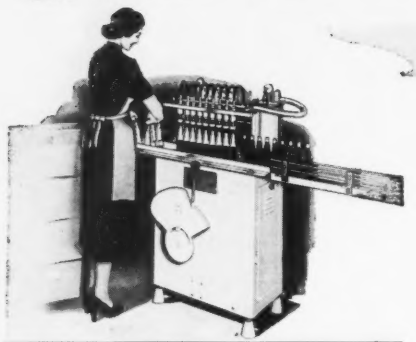
Burial was in Newton, Mass., where Mr. Shea had made his home for many years.

Route Your Product

Via

THE PACKAGING LINE ---------- THE ---------- BRAND NAMES TRAVEL





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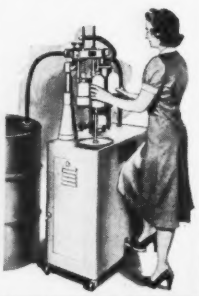
MODEL B-4^{c} STRAIGHTLINE VACUUM FILLER for liquids and semi-liquids. Most automatic one-operator multiple filler. With or without discharge conveyor. Contact parts stainless steel or plastics on special order. Adjustable for container sizes from AGST to gallon size finishes. Send for Bulletin B-49.

U. S. SIPHON FILLER. For all liquids, foamy products, products that do not permit agitation. Stainless steel tubes; acid resistant tank. Write for the Siphon Bulletin.

MODEL B-2 VACUUM FILLER provides efficient continuous production, filling two containers at a time. For liquids and semi-liquids. Vacuum is adjustable and flow-regulated. Handles containers up to 4½" dia. round or rectangular. Send for our Bulletin B-2.



The famous brands that travel the U. S. packaging line represent all types of products from free-flowing liquids to syrupy substances, such as pharmaceuticals, wines, liquors, foodstuffs, condiments, household chemicals, waxes, detergents, etc. The wide range of filling adaptations enables U. S. Rotary Vacuum Fillers to handle practically any type of container finish.

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TORONTO • VANCOUVER • WINNIPEG • TOLEDO (export)

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

1957

Happy New Year to you all! The coming year looks good and we'll still be eating high off the hog. According to a Department of Agriculture estimate, the U. S. produced in 1956 over 997 million bushels of wheat. At present population levels this means 6½ bushels or 390 pounds per capita. We produced nearly 3½ billion bushels of corn, which means 20¾ bushels or 1245 pounds per capita. Translating corn into pork at the corn-hog ratio of 4 to 1, this means 311 pounds of pork per capita. Therefore this year, 1957, you will have almost one pound of bread and almost one pound of pork chops per day. What the hell more do you want? Bourbon too?

Industrial Espionage

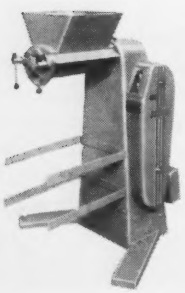
The theft of the oil exploration maps which, according to the newspapers, were stolen from the files of Gulf Oil Co., highlights a nefarious practice that has been going on in this country for years, supported, I am sorry to say, by some of the most reputable of our corporations. I speak from first hand information. Years ago I was employed on an equipment development project by a firm, known as reputable the country over. It is not, fortunately, in the drug or cosmetic industries. The project we were engaged on represented a new departure and would entail several millions of dollars of investment. The firm under discussion was engaged in a highly competitive industry, hence, they kept all important competitors under careful scrutiny at all times. One method—and a very subtle one—was to grill all salesmen, who also called on competitors, very thoroughly. Salesmen are blabber mouths and they do pick up bits of gossip which, when skilfully fitted together, form a pattern. To keep in the good graces of an important buyer they will spill their guts. Anything to curry favor and get an order. Purchasing agents and research chemists, who often talk directly with salesmen, should remember this because any interest evinced in a new chemical, particularly if it is in a new field, may disclose a research project to a competitor who knows how to deduce facts from odd bits of information, picked up hither and yon.

Through some such method of cross examination, the purchasing department of the firm being discussed reported to the chief engineer that its most powerful competitor was well ahead in the very field we were working in! This caused a stir in management circles. A firm that specializes in industrial espionage was called in and retained to procure the plans and specifications of the competing firm. I had heard of such firms before but they were all foreign firms. This outfit, I was told, was strictly an American concern composed of former intelligence officers. I was not present at any of the conferences but I was told that a handsome fee was paid by my so called "reputable client." In a few weeks the plans and specifications were produced and eagerly studied by the firm's engineers and patent attorneys. Fortunately for my client the study revealed nothing which Engineering had not anticipated and rejected on economic grounds. I lost faith in the integrity of the oufit and quit then and there. I felt disgusted and disillusioned. Three years later I saw the patent which was granted to the competing firm, and the data and drawings set forth were exactly the same as those obtained by the firm of industrial spies. The spies knew their nefarious business all right.

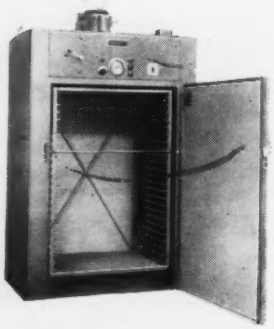
Years before that I had worked with an extremely brilliant engineer, a European, who later set himself up as representative of several important European firms. Since my friend never seemed to import any machinery or to buy any for export I asked him one day exactly what he had to do for his clients. He made no bones about it. He told me he was an industrial spy. He had a staff of chemists, engineers and patent attorneys. All patents within his sphere of

Versatile Stokes Model 566 machine enables Wyeth Laboratories, Inc. to develop many kinds of multi-layer tablets.

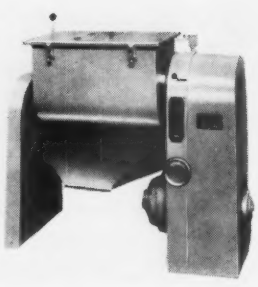
Stokes Auxiliary Equipment for Pharmaceutical Manufacturers



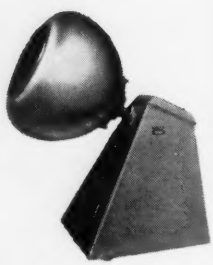
Granulators employ the efficient oscillating principle for breaking up moistened or dried aggregates. In a range of capacities.



Drying Cabinets use recirculating air; steam or electric heating under automatic control. Models with 5, 16 and 24 trays.



Granulating Mixers, for blending wet or dry materials, feature dust-tight lid, safety shut-off, contro'led tilt for unloading.

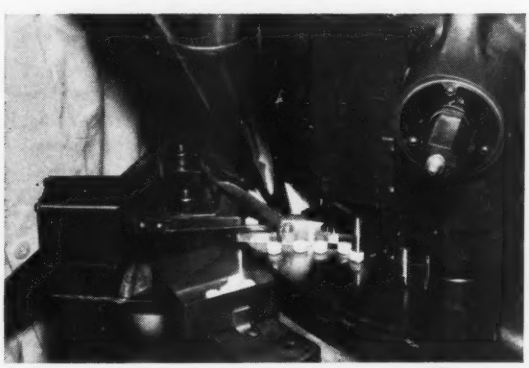


Coating Pans. Model 1-D stand uses 16″ to 60″ stainless or copper pans, or polishing pans with removable canvas drums.

Wyeth explores new ideas in multi-layer tablets

Stokes multi-layer tabletting press used to combine incompatible ingredients, create varicolored effects at Wyeth Laboratories, Inc., Research Institute.

Operators can readily check weight of each layer, by setting the machine to eject samples without stopping production.



While weight samples are being taken, incomplete tablets are automatically diverted from the normal discharge chute.

Product development people at Wyeth Laboratories, Inc. are carefully looking at new products that are now made possible by Stokes' development of a practical, precision production machine for multi-layer tablets. On a Stokes Model 566 multi-layer machine, they are working out many new ideas that may soon become new items in their product line:

Combining incompatibles. The multi-layer technique permits ingredients that cannot be blended together for conventional tabletting methods to be made into a single tablet, with incompatible materials separated into layers. It offers an ideal solution to combining incompatible materials for increasing or controlling effectiveness of certain drugs.

Special color effects. Various color combinations of layers can be used for identification, or for novelty appeal in children's medicines.

Individual layer pre-compression, in the Stokes presses, gives clean line separation and highly accurate control of weight in each layer. Weight tolerances of 1% or better are readily maintained. It's easy to check weight of each layer while the machine is operating. Three-layer presses can be easily set to produce two-layer or conventional tablets.

Stokes Model 566 multi-layer tablet machines use standard BB-2 punches and dies. For full facts, write to Stokes today, or contact your nearby Stokes tabletting representative.

Pharmaceutical Equipment Division

F. J. STOKES CORPORATION

5535 Tabor Road, Philadelphia 20, Pa.

STOKES

interest were carefully studied for the purpose of appropriating them or discovering means by which they could be invalidated. He got all sorts of other information that was of use to his clients but he never revealed the means by which it was obtained.

I have never believed in secrecy insofar as production methods and production equipment are concerned, when the products being made are trade marked and sold to consumers under trade names. I refer particularly to packaged products. I have always advocated open plants, for it is only by cooperation and the free exchange of ideas that we can continue our phenomenal progress. But when a product is sold in bulk to other manufacturers, I regard secrecy in formulation, manufacturing methods and equipment as being highly important especially when the combination of factors enables the producer to sell at a lower price than his competitors and still make money. Of course such products usually are limited to the expensive fine chemical group, in producing which, volume is relatively small as compared with heavy chemicals. The heavy chemical manufacturers have secret price agreements anyway—legal or not—so process information is of lesser account.

Even in the packaged goods field, I do believe in the utmost secrecy when new products are still in the research or development stage. A new product properly timed and supported can bite off a big chunk of the market before competition can get around to offering substitutes. But believe it or not, I have sat in management conferences in which the research director was required to report the status of all in-process research projects and submit gesstimates as to when new products would be ready for marketing! Considering the fact that every branch of these various firms were represented at these conferences, I thought it a hell of a way to keep secret information under cover.

As competition grows keener you can expect it to get dirtier.

Budgeteering

By this time I suppose most of you have submitted your capital budgets for 1957. I hope that in preparing your budgets you did not forget certain fundamental considerations:

Always remember that your budget will be scrutinized by some sort of finance committee, composed invariably of non-technical men, including in many instances, a controller who knows everything about everything as a general rule. Therefore keep your budget as technical as possible. Don't make it too easy to understand.

Always remember that it pleases the controller and his associates to cut budgets, particularly the production and engineering budgets. They regard such cuts as savings even though in course of time the "savings" may prove to have had a disastrous effect on production costs.

Always remember to load your budget with a lot of things you don't really need but for which you can put up a hell of a good argument. Don't go hog wild on this. Never include anything for which you can't put up a seemingly logical argument. Remember that non-technical men can be and usually are pretty sharp in detecting faults in logic even when they cannot dispute technical statements.

Always remember that if you can keep the committee arguing about things you can do without, you are almost certain to get everything you really need.

Example: I helped one of the boys in the trade prepare his capital budget. It came to a pretty sizable total. I insisted that a substantial amount be included to air condition the control labs, factory offices, cafeteria and recreation rooms. He demurred on the ground that management would never pass it. I told him that that was exactly what we wanted them to do as it would divert attention from the things we really had to have and could amply justify. Management can always be depended upon to make cuts somewhere. It makes them feel good. I pointed out that since the general office and the research laboratories were air conditioned, the management was in effect discriminating against the factory workers and that such an attitude could lead to union trouble. So we included air conditioning—the third item on the list. The first three everyone knew we had to have. Then came air conditioning. And the fireworks started! The plant manager put up a beautiful argument in support of it, while I supported him from the side lines. We wore them down. Finally Mr. Bigboss issued an edict. We couldn't have air conditioning and that was that. Everything else was approved with virtually no discussion. Everyone was satisfied. The committee had cut the budget by twenty per cent. The plant manager got everything he needed.

Australia Today

I just returned from a flying trip to Australia to inspect progress on the Aspro plant being erected on the outskirts of Melbourne by Nicholas Pty Ltd., which actually is the parent company of all the Nicholas companies throughout the world. This plant is big even by our standards—196,000 square feet. It is a one storey plant of course, with a two and a half storey front facade which houses the general offices, control laboratories, personnel amenities and all the plant shops and other services except the power plant which is part of the chemical plant at the rear of the building.

I was delighted to find that as a result of having a really competent industrial architect, Don Lumsden, on the job and an equally competent builder named Lewis (I am sorry I've forgotten the complete name of the Lewis firm but I can always get it for you if you are contemplating building in Australia), the project, in spite of prolonged wet weather and a chronic steel shortage, is three months ahead of

schedule. The speed with which the building has been erected is the talk of all Melbourne. It could not have been surpassed by any American builder that I know of.

The building committee comprises for the management: Directors Hilton Nicholas and Reg Balfe; for production George Wells; for engineering J. P. Collis and John Remington. The job has been beautifully coordinated. All my recommendations have been carried out or better ones substituted, and, even at a distance of 9,000 miles, correspondence between my office and their's has been carried on with virtually no misunderstanding on either side.

The changes in the city of Melbourne since my last visit a little over a year ago are striking. The effects of the immigration program are everywhere apparent in the little European restaurants, cafe expresso shops, delicatessen stores and night clubs. Melbourne is becoming cosmopolitan. Even the staid and stuffy Menzies Hotel (The Waldorf of Melbourne) now has a dance floor in the main dining room.

When I visited Melbourne for the first time in 1946 it was a stuffy Victorian town (in more ways than one). It took the staid burghers seven years to get over a speech I made comparing Australian and American language differences. God what a difference now!

I didn't like the site which had then been tentatively selected because of the terrain, but it was the only piece of land near Melbourne with all city services including transportation that was of sufficient size for future expansion. It was out in the farmlands then but now it sits in a plateau surrounded for miles in every direction with middle class housing developments. It has the biggest labor pool in all Melbourne to draw from. It turned out to be a convenient and spectacular location.

When I arrived in Melbourne it was ablaze with decorations for the Olympics. The Aussies did a marvelous job of preparing for the Olympics and the housing and feeding of the several hundred thousand people from all over the world was carried out with very few hitches. The athletes were housed in a separate — and permanent — housing development where they even had their own cooks, imported and paid for by the Australian government. It would take a book to describe the wonderful new structures, particularly the swimming pool and stadium, that were built. The stadium is a beautiful example of cantilever construction. But I got to see only the last game and the final ceremony. The damn Aussies worked hell out of me all day and entertained me all night. I wasn't left to my own devices for a minute. (My wife says, "Thank God for that!")

As soon as the Olympics broke up there was a mad rush to redecorate the city for Christmas. In this they do a spectacular job, much better than the English, and just about as well as we do. Office parties are common—I should say universal. We had quite a party at Aspro. George Wells was Father Christmas. He had to stuff the tarts. It's an old Australian custom.

The Aussies stick to their old customs and traditions. At Christmas, when the temperature is likely to be 95° F., they eat turkey and stuffing, plum pudding and all the trimmings. These gargantuan meals are topped off with Australian beer—the best and strongest in the world. It's no wonder most Australian firms take their annual vacations from Christmas to the middle of January. It takes them that long to recover.

Ships

I have long thought of the possibility of using abandoned ships as floating factories instead of letting them rot at anchor as we do after every war. In almost every bay and large river around the country, we have thousands of useful ships slowly rotting away. The smart Japanese have caught on the idea. They have equipped a large freighter as a floating industrial exhibit and it is now making all the ports of call in Australasia. As a matter of fact they had the idea before the war in that their salmon and crab boats, which used to fish Alaskan waters, were complete factories, that caught the fish, processed it, canned, labeled and packaged it. When the holds were filled with finished product, they'd drop it off at West Coast ports for warehousing and distribution. It wouldn't occur to our politicians to outfit our mouldering ships as traveling industrial exhibits, schools and museums of Americana and American distributism. The government has paid for the ships. All that need be done is outfit them and operate them. But that's too simple and inexpensive. When we have exhibited at industrial fairs abroad, the cost of our shows must easily have been several times the cost of even a new ship and these shows are all one time stands.

Office Jargon

IT IS IN PROCESS—So wrapped up in red tape that the situation is almost hopeless.

WE WILL LOOK INTO IT—By the time the wheel makes a full turn we assume you will have forgotten it, too.

A PROGRAM—Any assignment that can't be completed by one telephone call.

EXPEDITE—To confound confusion with commotion.

COORDINATOR—The guy who has a desk between two expeditors.

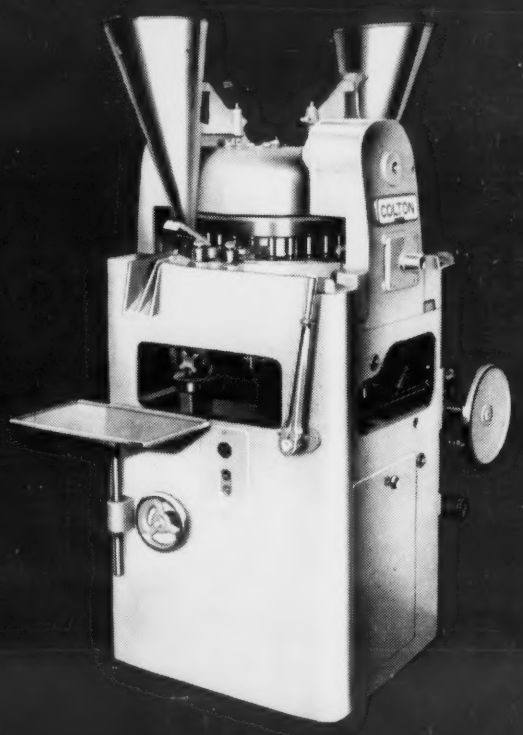
TO ACTIVATE—To make carbons and add more names to the memo.

TO IMPLEMENT A PROGRAM—Hire more people and expand the office.

UNDER ACTIVE CONSIDERATION — Never heard of it.

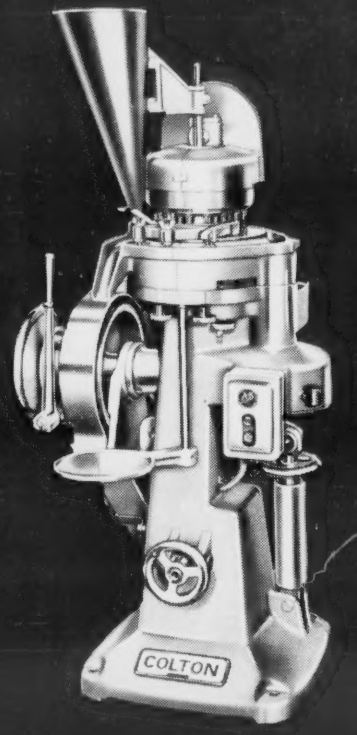
A CONFERENCE—A place where conversation is substituted for the dreariness of labor and the

GREAT COLTON QUARTET... Each unit providing substantially higher production than anything else in its class



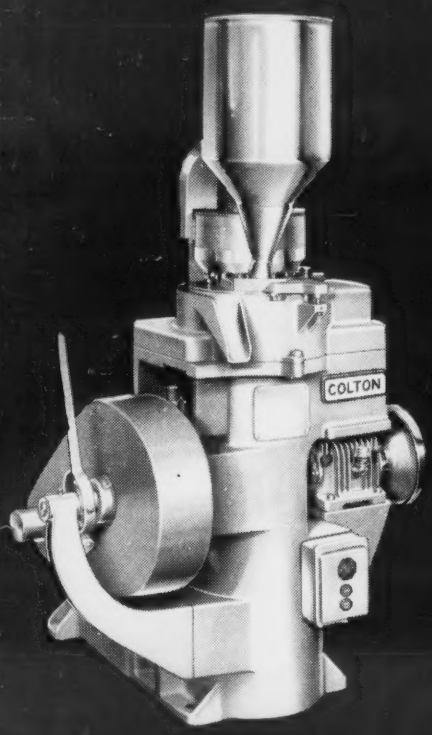
No. 541 Rotary Tablet Press

Capable of speeds to 6,000 tablets per minute; out-produces everything else in its class; in daily use in nearly every top-volume tableting operation in the industry. Quickly amortizes its cost through its extra production capacity.



No. 216 Rotary Tablet Press

Most versatile, most quickly converted to different products—least costly in tooling; ideal for shorter runs on private formulas; production rate up to 1150 tablets per minute is twice as fast as comparable units—almost up to a *double* rotary.



No. 240 Rotary Tablet Press

Heavily built (240), for max. capacity for slugging and making hard tablets; only 10 punches. Low tooling cost, quick, easy change-over giving high flexibility in private formula work. Production up to 700 tablets a minute is highest in its class.

No. 250 Rotary Tablet Press

Rugged, heavy-duty unit engineered for continuous high-speed operation on heavy duty slugging or lozenge type tablets. 25 to 43 punch stations. Capable of speeds up to 4000 tablets per minute—world's highest [illegible]

Colton prices and specifications

ARTHUR COLTON COMPANY

DIVISION SYKES TOOL & ENGINEERING COMPANY • 3570 E. LAFAYETTE • DETROIT 7, MICHIGAN

PLANT NO. 2 • 6555 MONTICELLO, DETROIT • PLANT NO. 3 • [illegible]

loneliness of thought.

TO NEGOTIATE—To seek a meeting of minds without knocking together of heads.

RE-ORIENTATION—Getting used to work again.

A CLARIFICATION—To fill in the background with so many details that the foreground goes underground.

WE ARE MAKING A SURVEY—We need more time to think of an answer.

LET'S GET TOGETHER ON THIS—I'm assuming you are as confused as I am.

SEE MR. or LET'S DISCUSS—Come down to my office, I'm lonesome.

UNDER ACTIVE CONSIDERATION—We're looking in the files for it.

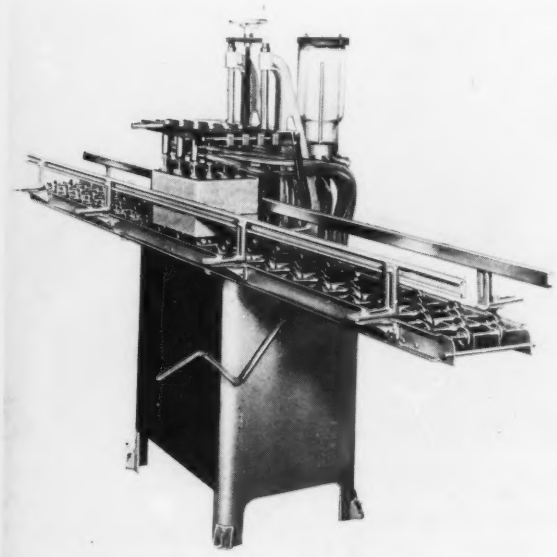
A MEETING—A mass mulling by master minds.

Fills Containers in Shipping Carton

A whole carton full of containers filled right in the carton is the function of the new MRM case-filling machine. The machine consists of an adjustable multiple head-filling mechanism—the number of heads supplied correspond with the number of containers packed in a case (it could be 4, 6, 8, 12, etc.)

Each head is adjustable to compensate for variations in container sizes. MRM supplies case fillers to handle 6-ounces up to gallon size containers of any type—glass, metal or plastic. Foamy detergent materials are handled with ease at the rate of two to six full cases a minute.

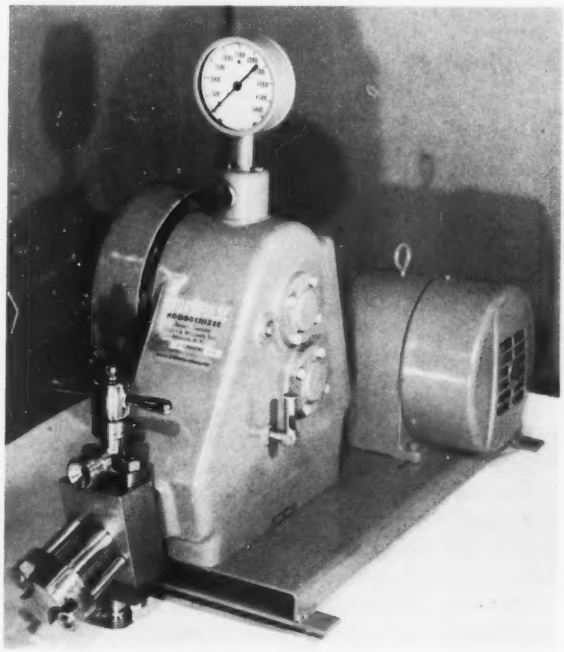
Illustrated is a semi-automatic model, but MRM case fillers can also be supplied for completely automatic operation in either vacuum, gravity or presure types. All machines are supplied with a roller chain



conveyor with quick adjusting side rails. MRM Company, Inc., 191 Berry Street, Brooklyn 11, New York.

Scott & Williams Homogenizer

Used to homogenize or pump abrasive, corrosive and sanitary products, the Hydropulse Homogenizer



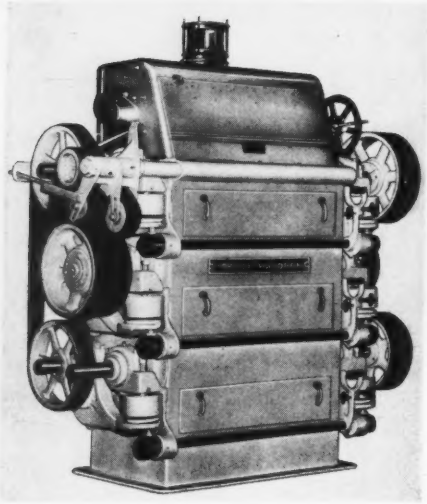
manufactured by Scott & Williams, Inc., Laconia, N. H. has been successfully applied to the handling of penicillin and other pharmaceuticals.

Pumping is accomplished by the expanding and contracting of a synthetic rubber pulsator within a stainless steel chamber. Pulsator expansion forces the product out of the chamber. Contraction creates a partial vacuum and causes the chamber to be refilled prior to the next expansion stroke. Net effect of the pulsator is to isolate completely the product from moving parts other than suction and discharge valves. This permits all sealing to be done with "O" Rings. No pistons, cylinders, or packaging come in contact with the product. The result is a leak-proof unit that is simple to clean and maintain.

The photograph shows Model 1LB-1 platform mounted. It is a constant volume machine delivering a maximum of 30 gallons per hour (minimum 12 gph). Maximum operating pressure is 3000 psi. All metal parts in contact with the product are of stainless steel. Larger models are available up to 420 gph.

Roller Mill Offers One-Point Control

Sprout-Waldron's new line of roller mills incorporates a new, easy method of controlling and adjusting the rolls. This exclusive one-point spring loaded roll control system consists of a conveniently located hand lever at one end of the front of the mill. This lever activates an eccentric mounted shaft extending the full length of the mill and provides instant, individual throw-out of each pair or rolls. Should tramp metal enter between the rolls, heavy springs compress and allow the rolls to separate for instant passing of the



metal, after which the movable roll springs back into perfect grinding position.

The sturdy spring construction of the end mechanism absorbs objectionable shocks and provides a consistent material granulation. Cool, dustless and moisture controlled operations are assured because of the absence of vibration and through the adequate provision for roll suction. Circulation is integral with the mill and eliminates the need for separate air lines to each pair of rolls. All rolls are continuously cleaned by full-length, high quality brushes which are available in nylon, Tampico or stainless steel.

Another feature permits the rolls on the two and three pair high mills to be independently removed through the mill without disturbing the other parts. In multiple installations, Sprout-Waldron roller mills are installed diagonally or in groups of two to insure easy removal of the rolls.

Also, slow rolls on this new mill are inter-connected by V-belts which provide desired differential ratios. Use of the V-belts make assembly and dis-assembly simple and eliminate the need to have gears re-cut when re-corrugating. Also, the ease of a V-belt differential insures quick operation of the mill and solves many lubricating problems.

All feeder housings are constructed of aluminum and stainless steel and are made so all interior parts can easily be reached from both the front and rear. Feeder can be removed in one piece without disturbing spouting. The feeders can be of the roll, shake, or squirrel cage type and are V-belt driven through a throw-out clutch. All standard models have a plexiglas inlet spout so the operator can be constantly observing the flow. Dust tight, quick opening doors at front and rear make it possible to inspect and "feel" material as it passes through the rolls.

This new Sprout-Waldron "One-Point Control" Roller Mill is available in one, two, and three pair high units. Each mill is operated with positive, simple adjustments and produces a very high capacity with a minimum of vibration and noise.

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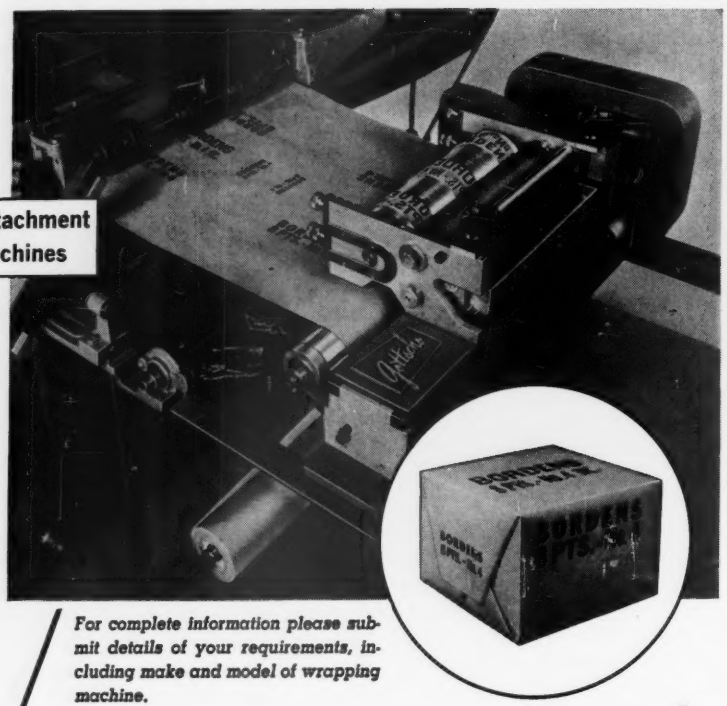

Ideal for imprinting anything from a code-date on a preprinted wrapper to complete display copy on 5 sides of a bundle overwrap. Fully automatic . . . requires no attention during operation, synchronizes with parent machine at regular production speeds . . . provides accurately positioned imprint. A miniature flexographic printer, the ROLAPRINTER attachment uses fast-drying liquid inks of any color and stick-on rubber type or dies. Assures consistent quality on all *films, foils* and *papers.* Mechanically simple . . . copy changes and adjustments for different wrapper sizes can be made quickly by untrained personnel. Models available to imprint areas from 1" to 24" wide.

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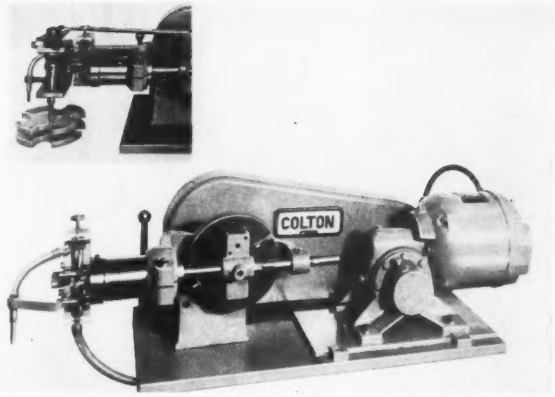
New Little Giant Fillers

New "Little Giant" single and twin-nozzle models of liquid fillers are now available from Arthur Colton Company, 3400 East Lafayette, Detroit 7, Michigan. These new models make available for the first time the features of high-speed, volumetric filling in a low-cost, compact, bench-type machine.

They are designed primarily for lower production manufacturers and are also ideally adapted for use by large manufacturers when small lots or samples are filled in small quantities. Addition of a standard rotary index table accessory permits the Little Giant machines to provide automatic single or double filling in conjunction with a conveyor belt.

Like other Colton multiple liquid fillers, these new models are equipped with the recently announced Colton patented metering cylinder and valve assembly which includes an adjustable suck-back control that permits high speed volumetric filling to accuracies within less than one per cent variation. They will handle a wide variety of liquids ranging from aqueous penicillin to paint; with alcohol to cream oil consistencies. Glass or plastic bottles, jars and cans can be filled with the new Little Giants.

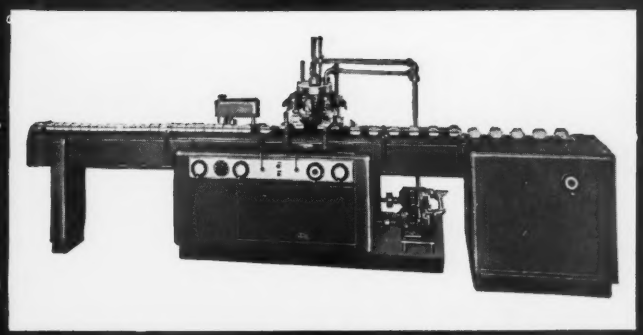
The Model 117 is a single metering clylinder, single-nozzle design having a total fill capacity of eight fluid ounces. It will fill a maximum of 40 containers per minute and is 82-in. long, 13-in. wide and 12-in. high. The Model 119 is a double-metering cylinder, double-nozzle design having a total maximum fill capacity of eight fluid ounces from each nozzle and a maximum filling speed of 80 containers per minute. It is 36-in. long, 16-in. wide and 12-in. high and can be equipped with a manifold that permits a maximum fill capacity of 16 fluid ounces from a single nozzle. Sprockets are available for each model to provide optional speeds of 18, 28, 36 or 40 cycles per minute.



The new Model 117 Colton "Little Giant" Liquid Filler. Insert shows filler equipped with a rotary index table for conveyer-line filling.

The fillers are powered with a geared heat motor. Amount of liquid delivery per stroke is adjusted by changing the stroke of a crank mechanism. Operation is by a manual control at the side which operates a single-revolution clutch.

truly a WHIZZING WIZARD— this Kiefer



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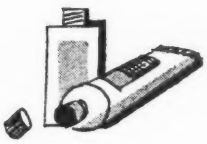

Advancing Therapy

Coal Tar Dye Safety

Previous studies with D. & C. Yellows No. 3 and 4 have shown that these dyes are decomposed by acid with the formation of beta naphthylamine. According to newer investigations by J. L. Radomski and W. B. Deichman of the University of Miami School of Medicine, reported in *Journal of Pharmacology and Experimental Therapeutics*, this does not take place in the stomach of rabbits. A small proportion of the Yellow No. 4 was decomposed by the acidity in the rabbit stomach; the result was not beta naphthylamine, but an unknown product.

Several dyes, according to these investigators, caused cathartic action in animals and man. Only Orange No. 1 was cathartic in man, while this dye, along with Orange No. 2, Yellows No. 3 and 4 and Red No. 32 were cathartic in animals.

Anisatin

The Japanese bastard anise plant has long been known to possess poisonous properties. Recently, a pure crystalline principle was isolated from this plant. Studies by M. J. Rodman and M. D. Jenkins reported to the Pharmacy Section at the 123rd annual meeting of the AAAS indicated that this substance, anisatin is an extremely potent convulsant poison but also has potential usefulness in the treatment of barbiturate poisoning and as a pharmacological tool in neurophysiological studies.

Anisatin, in relatively minute doses, caused fatal convulsions in several animal species. Injection of certain barbiturates can prevent death and reduce the number and severity of convulsions. Other barbiturates sensitize animals to the convulsant action of anisatin, causing an increase in the number of animals dying convulsively.

The compound is effective in arousing animals from barbiturate coma. Due to the prolonged duration of its central stimulating action, anisatin is especially effective in overcoming the deep depression produced by phenobarbital, a long acting barbiturate.

Sex Hormone Action

Joseph T. Velardo, Assistant Professor of anatomy and endocrinologist at the Yale University School of Medicine in New Haven, Connecticut, announced a new theory of sex hormonal action at the 123rd annual meeting of the American Association for the Advancement of Science in New York. Dr. Velardo reported that it seems more nearly correct to consider the actions of all the sex hormones in the body at the same time rather than believing that one hormone alone produced its effect on the reproductive tract.

The investigations, which originated at Harvard, indicate that two female sex hormones, estriol and 16 epi-estriol, may provide an important link in the study of the physiology of the reproductive cycle in the human.

The findings show that not only will these hormones interfere with the uterine growth promoting action of estradiol and estrone, but the absolute ratios of the four naturally-occurring sex hormones are critical in the amount and extent of uterine growth that can take place.

In preliminary researches with Drs. F. L. Hisaw, C. M. Goolsby and S. H. Sturgis, Dr. Velardo ascertained that estriol and 16 epi-estriol were potent uterine growth depressants when tested against estradiol and estrone.

Primarily it had been thought that estriol and 16 epi-estriol were just excretory or break-down products of estradiol and estrone, but current evidence indicates that both estriol and 16 epi-estriol are secreted by the placenta. It may be reasoned that these hormones exist as "protectors" against the injurious effects of the more active estrogens in the system. Thus, it seems that estriol and 16 epi-estriol are not only weak as uterine growth promoters, but function to modulate the potent and undesirable effects of the stronger estrogens during the stage when the uterus must prepare to accept the fertilized ovum and during pregnancy.

Tranquilizers

In a monograph recently published by the Public Health Service, Dr. Morton Kramer, Chief of the Biometrics Branch of the National Institute of Mental Health, discusses some of the public health and social problems involved in a widespread use of the tranquilizing drugs (chlorpromazine, reserpine). While he agrees that the drugs open a new era in psychiatry, it is his opinion that they are also a potential source of danger. Dr. Kramer believes that, in the first place, a survey should be made to determine how widely the medical profession is using the tranquilizing agents. He is convinced, too, that much more research is needed to determine the long range effects of the drugs, and that only after these and other important steps are taken can the drugs be used safely and with the greatest effectiveness.

Vitamin Circulation

Water-soluble preparations of vitamins A, E, and D_2 were administered intravenously by R. Decio and V. Alamanni (*Minerva ginec.* 8:381, 1956) to pregnant women. The quantities present in the blood of the mother and of the fetus were then measured. The values of vitamin A that passed into the fetus were of from 50 to 62.5 per cent, the values of vitamin E were of from 88 to 100 per cent. Values were of from 45 to 47 per cent and of from 20 to 23 per cent respectively when the two vitamins were given intramuscularly. The passage of vitamin D into the fetus could not be measured exactly; however, the authors advanced the hypothesis that it could reach values of 100 per cent.

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Atherosclerosis

Choline, methionine, and inositol added to a normal, adequate diet are without effect on hypercholesteremia both experimentally in animals and clinically. They are equally ineffective in preventing cholesterol-induced atherosclerosis in animals. The sitosterols, if given in large doses are capable of reducing cholesterol-induced hypercholesteremia and atherogenesis. Clinically they are useful in decreasing hypercholesteremia and in slightly depressing normal cholesterol levels. The effect, however, is not uniform in all patients so treated, some reacting more favorably than others. Generally, the higher the cholesterol level, the more pronounced the effect. At the present time there is no direct clinical proof that depressing hypercholesteremia helps to prevent the development of atherosclerosis. The justification for the use of these agents lies in the well-documented fact that diseases accompanied by hypercholesteremic states have a significantly higher incidence of atherosclerosis, particularly of the coronary vessels, than diseases accompanied by normocholesteremic states. Also, patients with coronary artery diseases, as a group, have elevated serum lipid levels. It is theoretically sound (and experimentally proved) to implicate the serum lipids in atherogenesis and therefore to try to reduce abnormally high serum lipid levels by dietary or pharmacological means in the hope of retarding the vascular process.—*J.A.M.A.* 162: 1508, 1956.

Iron Therapy

K. J. Master and G. L. Jenkins reported to the Pharmacy Section at the 123rd annual meeting of the AAAS the synthesis of a new compound, ferrous methanetrisulfonate.

At a daily oral dose of 0.5 mg. iron per rat, ferrous methanetrisulfonate and ferrous methionate appear to be equivalent to ferrous gluconate in their hemoglobin regeneration activity and increasing weight response in twenty-one weeks iron deficient rats. The results obtained with three different combinations of these compounds at the same dose level seems to indicate absence of any additive activity or potentiation upon their hemoglobin regeneration activity in iron deficient rats. No gross pathological changes were observed in rats treated with the above three compounds and their combinations.

New Pharmaceuticals

Phenaphen Plus (Robins) is intended for the symptomatic relief of the common cold, influenza, allergic rhinitis, etc. Each coated tablet contains 194 mg. phenacetin, 162 mg. acetylsalicylic acid, 16.2 mg. phenobarbital, 0.031 mg. hyoscyamine sulfate, 12.5 mg. prophenpyridamine maleate and 10.0 mg. phenylephrine hydrochloride, thus combining analgesic, sedative and antipyretic effects with antihistamine and nasal decongestant action. It is available in bottles containing 100 orange, coated tablets.

Ilotycin Dental Cones (Lilly) are indicated for the prevention of the local multiplication of bacteria associated with tooth extraction. The cones disintegrate completely in the small volumes of plasma or serum normally found in the extraction wound. Each cone contains 5 mg. of "Ilotycin" as the glucoheptonate salt, the filler being sodium bicarbonate and sodium chloride. A sealed metal foil packet protects each cone from contamination and moisture and the cones are supplied in packages of 24.

Flavinol C (Walker) contains 100 mg. of Flavinol, a hesperidin complex, and 100 mg. of ascorbic acid in each candisphere and is available in bottles of 30 and 100.

Pinisirup (Walker) is a pleasant-tasting fruit-flavored syrup containing piperazine phosphate in amount equivalent to 500 mg. of piperazine hexahydrate in two teaspoons and is supplied in 8 oz. bottles.

Vi-Penta (Hoffmann-La Roche) is the family name for three vitamin drop preparations. No. 1 contains vitamins K, E and C and is available in 5 cc. vials; No. 2 provides vitamins A, D, C and E and is packaged as 15 and 50 cc. vials; No. 3, formerly called Vi-Penta Drops contains eight essential vitamins for infants and children of all ages and is available as 15 cc., 30 cc. and 50 cc. vials.

Gantrimycin (Hoffmann-La Roche) is a tablet combination of 333 mg. of Gantrisin and 75 mg. of oleandomycin and is available in bottles of 50 tablets.

Cytoferin Liquid (Ayerst) in each 10 cc. contains 200 mg. U.S.P. ferrous sulfate and 150 mg. ascorbic acid. It is supplied in 8 oz. bottles and is also available as tablets in bottles of 100 and 1,000.

Incremin (Lederle) contains lysine along with vitamins B_1, B_6 and B_{12} for improving poor appetite and slow growth in infants. Each tablet contains 300 mg. lysine hydrochloride, 25 mcg. vitamin B_{12}, 10 mg. thiamin hydrochloride, 5 mg. pyridoxine hydrochloride and one per cent of alcohol. It is packaged in bottles of 30 tablets, 12 bottles to a counter display carton.

Tempogen (Merck Sharp & Dohme) is a multiple compressed or press coated tablet. The solid inner core contains 1.0 mg. of prednisolone and 60 mg. of sodium ascorbate, while the outer layer includes 300 mg. of acetylsalicylic acid and 200 mg. of dried aluminum hydroxide gel. The preparation is intended for the treatment of certain rheumatic conditions and is available in bottles of 100, 500 and 1000.

Enzeon (Breon) is a suspension of chymotrypsin in sesame oil for intramuscular injection. It is a proteolytic enzyme with anti-inflammatory action and is supplied in 5 cc. multidose vials.

Tetracydin (Pfizer) is a combination of 125 mg. tetracycline hydrochloride, 15 mg. of buclizine, 120 mg. of phenacetin, 150 mg. of salicylamide and 30 mg. of caffeine per tablet for the treatment of minor respiratory infections and relief of associated symptoms. It is available in bottles of 24 tablets.

Neo-Slowten (Patch) is a combination of ¼ grain phenobarbital, 0.1 mg. reserpine and 5 mg. thiamine hydrochloride, useful in the treatment of anxiety, insomnia, agitation, mild hypertension. It is available as white, scored tablets in bottles of 100 and 1,000.

Buffered Pabirin (Smith-Dorsey) contain aluminum hydroxide, para-aminobenzoic acid and ascorbic acid in the outer layer and acetylsalicylic acid in the core of a layered tablet. The *Buffered Pabirin AC* tablets have the same composition in the outer layer but contain both aspirin and hydrocortisone in the core. The first preparation is available in bottles of 100 and 500 tablets, the second in bottles of 50 and 250 tablets.

Plestran (Warner-Chilcott) is a metabolic regulator; each tablet contains a balanced combination of methyltestosterone, ethinyl estradiol and thyroid globulin. The preparation is available in bottles of 100 and 500 tablets.

Consolets (Merrell) are troches containing narcotine, Decapryn and terpin hydrate for cough relief. They are available in boxes of 24 troches.

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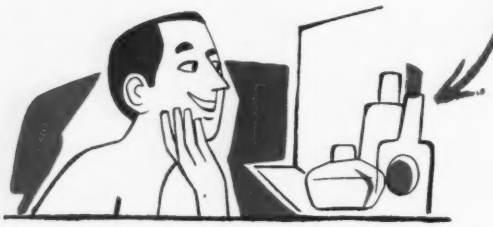

PHARMACEUTICALS

Antiseptic Ointments
Diaper Rash Preparations
Instrument Sterilization
Bandages
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Skin Research

Symposium on Cosmetics

In connection with the Section on Pharmacy at the meeting of the American Association for the Advancement of Science held in New York City, a Symposium on Cosmetics was held on December 27, 1956. The Symposium was sponsored by the Committee on Cosmetics of the American Medical Association.

Veronica L. Conley, Secretary of the Committee on Cosmetics, delivered the first paper on "The New Role of Cosmetics."

"A new era of greater prestige has been ushered in for the science of cosmetics. With this comes increased responsibility that cosmetics successfully meet measurable physical needs with less reliance on presumed and elusive psychological effects as a crutch to support useless products.

"Scientists within the industry are working conscientiously toward meeting the requirements of this new role. Investigators ask not only that the cosmetics be safe for the skin, but that they offer tangible benefits. Cosmetics, old and new, are being scrutinized as never before."

Paul G. I. Lauffer of the House of Tangee delivered a paper on "The Scientific Formulation of Cosmetics."

Those responsible for formulating cosmetics must have ever before them the three words: safety, efficacy, attractiveness. In the unending quest for better cosmetic products, the aim is to improve one or more of the above qualities without impairing the others.

A cosmetic preparation must be so harmless that it can be applied several times a day to any normal skin without any adverse effect, even if its use is continued for years. It must be effective in producing some improvement, or in delaying or preventing some deterioration, in the appearance of the user. It must be attractive in appearance, consistency, fragrance, and presentation, so that it will suggest to the purchaser the effects its use is expected to bring about.

In formulating improved cosmetics, applicable scientific data must be utilized as fully as possible. Knowledge of the effects of ingredients upon the skin is necessary in the interest of safety and efficacy. For attractiveness, the physical and chemical stability of the ingredients and of their mixtures must be known.

The necessary data come from many fields of science: physical chemistry, biochemistry and physiology are the major sciences involved, but the subdivisions of these sciences and the dependent technologies from which cosmetic technology draws assistance are too numerous to list completely. Colloid chemistry, bacteriology, immunology, leather chemistry, and dermatology may be mentioned as typical of the disciplines contributing data of value.

"The Essentials of Skin Cleansing" was discussed by *Raymond R. Suskind* of the University of Cincinnati.

The development and widespread availability of cutaneous cleansing agents has significantly affected medical and social progress. Such agents, no matter what their chemical configuration, can be classed as cosmetics since they are employed to maintain the health and normal function of the skin. Although their mode of action is not completely understood, it appears that the cleansing mechanism for both soaps and synthetic detergents is essentially the same. Cutaneous cleansing agents are not only employed for their numerous salutory effects on normal skin but are employed effectively as preventive and therapeutic agents in certain specific dermatoses. Adjuvants may be incorporated to enhance such benefits. In dermatologic conditions where common cleansing agents are not tolerated, substitutes must be prescribed.

The paper "Control of Axillary Sweating and of Body Odor" by *Marion B. Sulzberger and Franz Herrmann* of the New York University Post-Graduate Medical School was delivered by Dr. Herrmann.

Aluminum salt preparations can be used to reduce the amount of axillary sweating.

Undesirable odor attributable to peculiarities in sweating is only one of many factors which may give rise to undesirable body odor; and malodorous sweat in the axillae is but one of many different forms of undesirable odor formation associated with sweating. "Axillary odor" is largely due to decomposition of sweat produced by special glands ("apocrine glands", akin to the milk glands) which are present in great number in the vaults of the armpits. The decomposition is produced essentially by the action of microbial enzymes on the skin surface. Accordingly, measures and agents capable of reducing the microbial flora on the axillary skin are effective in the control of malodor emanating from this site. These include thorough washing with soap and water and the local use of antibacterial chemicals, of aluminum salts, antibiotics, etc.

"The Present Status of Pigment Forming Drugs" was discussed by *A. B. Lerner* of Yale University.

He reviewed the chemistry of melanin formation and noted that the color of skin may be changed by influencing the pigment cells. The removal or inhibition of tyrosinase will cause the skin to lighten in color, while stimulation of this enzyme causes more pigment formation and skin darkening. The color of skin may also be influenced by changing the degree of dispersion of the pigment granules themselves; as the melanin is dispersed, color is darker.

Melanocyte darkening agents may thus be tyrosinase activators or melanin dispersers. In the first class are psoralen compounds and ultra-violet light while the second group includes MSH, a stimulating hormone, progesterone, mesantain and caffeine.

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The melanocyte lightening agents are the tyrosinase inhibitor the monobenzyl ether of hydroquinone, and the melanin granule aggregating agents which include yalen, epinephrine, triiodothyronine, serotonin and a pineal factor. The monobenzyl ether of hydroquinone requires a fairly long period of time before its effects are noticeable; although it will lead to lightening of skin color in about 50 per cent of cases, it is also a sensitizer in 15 per cent of cases. In a discussion of psoralen derivatives it was pointed out that the trimethyl derivative caused more darkening with less erythema.

Bernard E. Conley, of the Committee on Toxicology of the American Medical Association, discussed "Toxicity Problems of Cosmetics."

Since the skin is neither an invulnerable nor impenetrable covering, it is likely to sometimes respond adversely to products with which it is in intimate and constant association. If these products contain agents which are irritating or even sensitizing to a certain proportion of the population, then users should be adequately informed about the risks of injury. Cosmetics, as a group, are a relatively safe class of chemicals in comparison with most chemical products found in the home. They are tolerated by the vast majority of users. Those products which are susceptible to misuse thereby producing injury are comparatively few.

Prednisolone Ointment

The clinical effectiveness of topically applied prednisolone alcohol was evaluated by E. H. Zimmerman (*J.A.M.A.* 162:1379, 1956) by the simultaneous paired comparison method in 137 patients with various selected dermatoses. In 99 out of 128 cases (77 per cent) the prednisolone alcohol was more effective than, or equally effective as, the hydrocortisone free alcohol, although it was used in one-half the concentration of the latter. In 24 cases in which the clinical effect of prednisolone alcohol (0.5 per cent) in water-washable base was compared with that of the empty water-washable base, the prednisolone was much more effective in 19 cases, the two were equally effective in one case and equally ineffective in three cases, and the prednisolone was less effective than the water-washable base in only one case. There was no instance of an allergic sensitization to either the prednisolone alcohol or the hydrocortisone free alcohol. No evidence of undesirable side-effects from systemic absorption of the medicaments was noted.

These results indicate that prednisolone alcohol, when used in only one-half the concentration of the hydrocortisone free alcohol, is as effective as, or slightly more effective than, hydrocortisone free alcohol in the topical therapy of various dermatoses such as allergic contact dermatitis, atopic dermatitis, and pruritus ani. It would appear then that, upon topical application, prednisolone alcohol is approximately twice as effective, milligram for milligram, as hydrocortisone free alcohol.

Comment: A completely contrary opinion as to the comparative efficacy of prednisolone and hydrocortisone ointments was stated by C. C. Smith and reported in these pages—December 1956, p. 829.

Cutaneous Fungicide

The treatment of 65 patients with Finaf for dermatomycosis is detailed by B. H. Kuhn (*A.M.A. Arch. Dermatol.* 74:627, 1956). The solution was originally compounded 20 years ago with various percentages of isopropanol. The present formula is a solution of 5.5 per cent of salicylic acid and 0.3 per cent of crystalline copper sulfate in a base consisting of equal parts of isopropanol and water. The current addition of traces of a ferric salt enhances the effectiveness of the preparation. Four cases reported a dermatitis venenata which was not verified clinically. There were nine per cent treatment failures, 14 per cent good results and 77 per cent excellent results. The effectiveness of this medication in acute inflammatory dermatomycosis is still to be tested.

Synthetic Detergents

In 1953 the Minister of Housing and Local Government in Great Britain set up a committee to examine the effects of the increasing use of synthetic detergents. In its report, now published, the committee states that the incidence of skin trouble attributable to synthetic detergents is no higher than that previously due to the use of soap products, alkalies, and allied preparations. Inquiries made by the British Launderers' Research Association have revealed that dermatitis is rare among commercial laundry workers and that no significant increase has occurred since modern synthetic detergents were introduced. Similar investigations made by the Ministry of Health show that among the general population there has been some incidence of cases of dermatitis. Many of them may have been due to the use of unnecessarily strong detergent solutions. In 1951, of just under 10,000 new patients seen at the skin departments of a London and of a provincial teaching hospital, only 143 were suffering from dermatitis attributed to the use of synthetic detergents. The committee states that it has no reason to believe that there has been any increase in incidence since that time.

The manufacturers have reached the same conclusion, based on the results of inquiries among customers and on observation of the incidence of skin irritation among their own employees who have frequent and prolonged occupational contact with synthetic detergents. Users are advised to avoid making up unnecessarily strong solutions and, in any event, to rinse and dry their hands after using these detergents. People with unusually sensitive skins should choose the product best suited to themselves and should continue to use gloves, hand creams, and lotions.—*J.A.M.A.* 162:1489, 1956.

Antiseptic Detergent

The antiseptic detergent pHisoHex proved highly effective as the principal therapeutic agent in a wide number of skin diseases where infection was a primary or complicating factor, the late Dr. Francis T. Hodges reported in *GP* (14:86, 1956).

In the studies cited, he said that the detergent containing three per cent hexachlorophene, proved to be a highly effective, non-alkaline, non-soapy, penetrating germicidal skin cleanser with lasting residual action.

In a series of 42 cases of acne vulgaris, improvement was observed in every case after routine cleansing with pHisoHex, and "far excelled" results with standard agents. Results were uniformly better if treatment was thorough and persistent. Induration and coalescence of lesions declined almost immediately. Seventeen cases were discharged from active treatment after periods ranging from eight to 20 weeks.

Selsun Cream (Abbott) is a replacement for Selsun Jelly for the treatment of seborrheic dermatitis on limited areas. It is a 0.5 per cent suspension of selenium sulfide in a water-miscible base and is available in ¼ ounce tubes.

Selsunef Ointment (Abbott) contains 0.5 per cent selenium disulfide and 0.5 per cent of hydrocortisone acetate in a soft petrolatum base. It is intended for the treatment of allergic dermatoses on small areas of the body where seborrheic involvement is suspected, and is available in 5 gram tubes.

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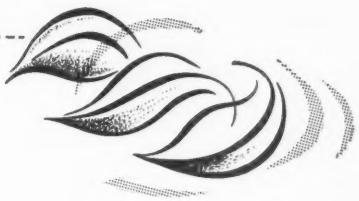

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Compounder's Corner

Aerosol Emulsions

The role of emulsions in aerosol systems is well established for foam products. Recent developments in the "Kinetic" Laboratory show that emulsions have advantages in many other types of water-based formulations. Some of the ways in which the development of practical aerosol emulsion systems opens the door to new products and new ways of packaging old ones are listed here.

The formulation of many new products is possible. The discharge can be regulated from soft, space-type sprays to wet residual-type sprays. Water-soluble products applied to the skin will not wash off readily. Formulations can be developed without undesirable cooling when applied to the skin. Extraction of the active ingredient into a separate propellent phase is not a factor. Formulations can be packaged without standpipes if desired.

The vital part of a good emulsion is the emulsifying agent. Emulsifiers are a subdivision of the general class of surface-active agents which also includes wetting agents, solubilizers, detergents, suspending agents, etc. In the investigation of "Freon" emulsion systems, dozens of agents were examined and several were found capable of producing stable emulsions. The three emulsifying agents found most useful with "Freon" systems are:

Emcol-14—a polyglyceride ester of a fatty acid.

Span-20—sorbitan monolaurate and polyethylene glycol 400 di tri ricinoleate.

"Emcol-14" has been used in most of the preliminary work because it seems to produce less foaming and to cause less corrosion. However, these effects vary with different formulations and the most satisfactory agent must be determined in each case.

Many of the conventional industrial emulsions contain two or more surface-active agents and it seems probable that this may also be true for aeroso' emulsions when complete formulations are worked out. Selection of emulsifying agents should probably be restricted to oil-soluble nonionic types unless foam products are desired.

As a general rule the emulsifying agent should be soluble in the "Freon" phase in order to form water-in-oil type emulsions. This type is preferred rather than the reverse. When oil is the continuous phase it can be extended by the "Freon" propellent without destroying the emulsion. Another advantage of using oil-soluble emulsifying agents is that the sprays tend to be nonfoaming. Since the emulsifier is not soluble in the water phase, there is little foaming action in the application of the formulation. However, considerable differences in this property have been observed. The emulsifying agents listed were much better in this respect than most of the agents examined. In some cases slight bubbling of the residual film has been found. Low-boiling solvents especially may contribute to bubbling. The effect can generally be reduced by reformulation.

Since emulsifying agents are generally compounds with large molecules and high molecular weights they are only slightly soluble in the propellents. In order to increase their solubility and therefore increase the ease of formation and stability of the emulsion, cosolvents can be used. Purified mineral oils, odorless mineral spirits and deodorized kerosene give excellent results. Vegetable oils including cottonseed oil, peanut oil, corn oil, etc., have also been successfully used. Almost any liquid that is a solvent for the emulsifier and is soluble in the propellent can be used if it satisfies other requirements of the formulation. Lower-boiling solvents such as "Freon-11" or "Freon-113" have been used successfully in the formation of stable emulsions.

The proportions of propellent, water and auxiliary solvent depend on the requirements of the formulation, the kind of spray desired and pressure limitations. In most of this work the emulsifying agent was used in concentrations of one or two per cent by weight. However, the optimum amount of emulsifier must be determined for each formulation. Since the auxiliary solvent is soluble in the "Freon" it will reduce the pressure of the final formulation. The concentration of active ingredients and modifying additives in the water phase may also effect the ease of formation and stability of the emulsion. Aqueous solutions containing as much as 50 per cent active ingredient have been successfully emulsified.

Since the auxiliary solvent is partially selected for its ability to dissolve the emulsifying agent, a short period of stirring is usually sufficient to produce a uniform solution.

Water containing the active materials is added to the solvent solution of the emulsifying agent. In addition to the nature and relative amounts of the components, the stability of an emulsion depends on the method of formation. Generally, the finer the particle size of the dispersed phase the more stable will be the emulsion. Fine particle size usually requires vigorous mechanical agitation while the water solution is being added to the oil phase. However, the need for stable, non-separating emulsions will depend on the nature of the product. In some cases it may be sufficient to load the various components separately into the aerosol container and form the emulsion by shaking.

After the emulsion has been prepared it can be handled like a single fluid and can be poured or metered into the container. If the emulsion is too viscous to handle easily, it can usually be thinned by reformulation to increase the amount and/or decrease the viscosity of the continuous phase. The addition of small amounts of other surface-active agents may also decrease the viscosity.

Since the emulsion is a water-in-oil type, addition of the "Freon" propellent merely extends or dilutes the emulsion. Pressure filling of the propellent will be necessary.

This far, work with "Freon" emulsions has been aimed at outlining the basic properties of these interesting aerosol systems. For this purpose water and only a few types of auxiliary solvents have been used. The effect of relative concentrations of propellent, solvent and water or spray character, stability, pressure and flammability of the final product has been studied.

The effect of active ingredients and various modifying materials may change the properties of the basic system and must be studied for each formulation.

The discharge spray of aerosol emulsions can be made either fine or coarse depending on the formulation. Among the factors affecting the spray are the pressure, the concentration of propellent, and the construction of the valve. By proper adjustment of some or all of these elements the right spray for the application can be obtained. The character of the spray can be changed considerably by the choice of valve or actuator.

The pressure of aerosol emulsion formulations is essentially the same as if the water phase were not present. The pressure depends on the selection of the "Freon" propellent and the effect of the auxiliary solvent. The addition of a solvent will lower the pressure of the propellent to an extent depending on the concentration and nature of the solvent.

In general, mixtures of nonpolar solvents and the propellents form "regular" solutions and the effect on the pressure can be predicted. A reduction in pressure similar to that shown for mineral spirits and kerosene would be expected for other light oils and non-polar solvents. Higher molecular weight oils will have an effect similar to that of mineral oil.

By strict definition an emulsion is stable as long as the particles of the dispersed phase do not coalesce or flow together even though there is some separation of the phases. All emulsion formulations must be stable in this sense. When separation of the phases does occur it is essential that complete and uniform redispersion be obtained with slight stirring or shaking of the container. Creaming of aerosol emulsions is not considered harmful provided that redispersion is fast and the emulsion remains uniform during the time of application.

In some formulations the emulsion in the standpipe has been difficult to redisperse causing an initial wet spray. It is believed that the viscosity is an important factor in redispersion and that when separation in the standpipe is a problem it can be corrected by proper formulation. Of course, for products where no standpipe is used this problem would not exist.

The presence of water in the aerosol emulsions apparently has little effect on the flammability of the complete formulation. Whether or not the product is flammable depends on the relative amount of flammable oil present. As a quick guide, preliminary work showed that the product was nonflammable when 20 parts by weight of flammable solvent was present. When the flammable solvent concentration was 30 parts, the product was flammable and at 40 parts of flammable solvent the product was flame sustaining.

One interesting result of tests so far has been the lack of corrosion with systems containing "Freon-11" when "Emcol-14" was the emulsifying agent. If this lack of corrosion with aqueous emulsions containing "Freon-11" is significant it may be that this combination can be packaged in cans in addition to glass bottles.

The emulsion systems described form very readily and no difficulties on a plant scale are anticipated. When laboratory experience shows that the emulsion forms especially easily, it may be possible to load the materials separately and form the emulsion by shaking the final package. However, it may be preferable to perform the emulsion between the aqueous concentrate and the auxiliary solvent containing the emulsifying agent. The emulsion can then be loaded and followed by the propellent. Addition of the "Freon" will not affect the emulsion if it is of the water-in-oil type where the auxiliary solvent is the continuous phase. Since the emulsions contain water, the propellent must be pressure loaded. All normal precautions to remove air should be observed.—*"Kinetic" Technical Memorandum No. 21—du Pont.*

Silicones

At a meeting of the Society of Cosmetic Chemists of Great Britain at the Royal Society of Arts, London, the subject of "Silicones in the Cosmetic Industry" was introduced by Mr. T. W. Watson. After showing a color film entitled "What's a Silicone?" Mr. Watson discussed the synthesis of different silicones and outlined their special properties which might suit them for use in cosmetics. The liquids, for example, are water-white oily substances with viscosities ranging from values less than that of water to extremely viscous fluids. They have low volatility and their relatively low surface tensions enables them to spread well on the skin to form a thin invisible continuous film which is water repellent. Thus protection may be afforded against contact with soap and other detergents, acids, alkalies and organic solvents and protective properties may be given to emollient creams, ointment bases, and so on.

Mr. R. T. Dobson, president of the Society, introduced a discussion by suggesting that cost was important. It would be necessary to examine the efficiency at this low level of concentration and compare it with that of the conventional materials. One promising use would be for the treatment of molds to prevent sticking of the molded material. In the discussion, Dr. Matalon expressed anxiety lest the application of silicones to the skin might interfere with metabolism as a result of penetration, or, by blocking interfaces, interfere with the remedial action of antibiotics. Mr. Watson said many publications described the silicones as innocuous.—*Manuf. Chem.*

Quaternaries in Hard Water

Accord ng to R. M. Reese of Sterwin Chemicals, Inc., the statement made in the November 1956 ssue of this magazine, page 688, that quaternary bactericides are ineffective in hard water, needs correction.

"Their bactericidal activity in use solutions prepared with hard waters is not lost. It is the rate of bactericidal activity which may be affected and such effect of hard waters on the speed of bactericidal activity is more pronounced with some quaternaries than with others.

"The temperature of quaternary use dilutions, as with other bactericides, is an important factor. At 20 to 25° C. some quaternary bactericides, without sequestering agents, have a hard water tolerance level of at least 600 ppm hardness when tested by official procedures governing label claims. In use dilutions at 37 to 45° C. these same quaternaries are effective in waters up to 900 and 1200 ppm hardness, without sequestrants. . . . Quaternary germicide labels must be registered with the U. S. Department of Agriculture. The maximum hard water level at which they are effective within 30 seconds at 75° F. must be declared on the label."

Trade Literature

Package for Profit

Package for Profit, a 26-page booklet with a 16-page appendix has been issued in its latest edition by "Kenetic" Chemicals Division, E. I. du Pont de Nemours & Co., Wilmington 98, Delaware. The book contains information about the expanding aerosol market and the use of "Freon" propellents. Packed with vital information and beautifully illustrated, this book should prove valuable to those interested in aerosol products.

Water Analysis

Solvay Process Division, Allied Chemical & Dye Corporation, 61 Broadway, New York 6, has issued a revised, enlarged edition of their technical and engineering service bulletin No. 11—Water Analysis. This 100-page bulletin is extremely comprehensive.

Lanolin

Robinson, Wagner Co., Mamaroneck, N. Y., has issued Product Bulletin 52, titled Lanolin. This 24-page booklet is a useful, as well as informative publication giving complete current information relating to lanolin and its derivatives.

Dow Corning Silicones

The new 1957 Reference Guide to Dow Corning Silicones is available from Dow Corning Corporation, Midland, Michigan. Almost 150 commercially available silicone products are described, including several which were developed within the last year. In this 12-page, two-color, heavily-illustrated booklet products are grouped by usage. Descriptions are brief and factual, with emphasis on charts, tables and graphs directly comparing various silicones with materials they are replacing.

Sealing Corrugated Cartons

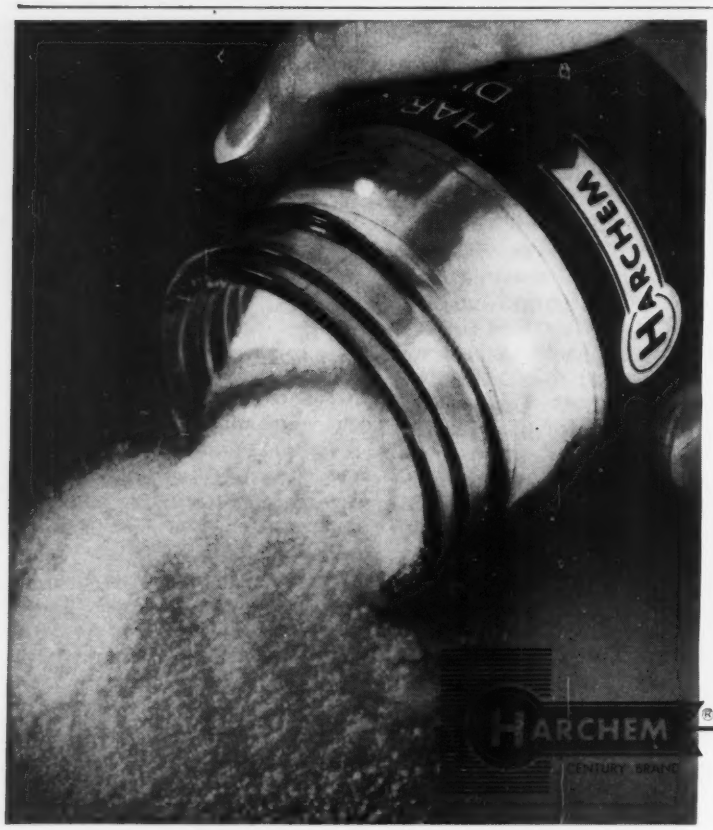
Hinde & Dauch, Sandusky, Ohio, has issued a new, revised edition of the Little Packaging Library booklet, How to Seal Corrugated Cartons. The 24-page publication features a new format, illustrations, and text material to explain all facets of modern package sealing. Both hand and automatic sealing procedures are discussed including application of adhesives, gummed and pressure-sensitive tape, stitches, staples and steel bands.

Rx Brand Names

National Pharmaceutical Council, 610 Fifth Avenue, New York 20, has issued, mainly for distribution to doctors, a beautifully conceived and executed booklet entitled "24 Reasons Why Rx Brand Names Are Important To You." This booklet aims to impress the doctor with the necessity of his prescriptions being filled with the exact brands of drugs called for. This is done by discussing potency, compatibility, purity, sustained release medication, enteric coating, disintegration time, solubility, particle size, choice of vehicle or base, quantity of active ingredient, allergic manifestations, irritation, pH, toxicity, coloric values, melting point, surface tension, viscosity, ease of application and removal, flavor, research and development effort, quality and manufacturing control, packaging research, storage, and control numbers.

Oxford Model B Dialyze

Oxford Laboratories, 111 Sutter Street, San Francisco 4, have issued a leaflet describing the Oxford Model B Dialyzer, a unit capable of concentrating 16 separate solutions, up to 20 ml volume each, or equilibrating solutions against buffer up to a volume of 5 liters.



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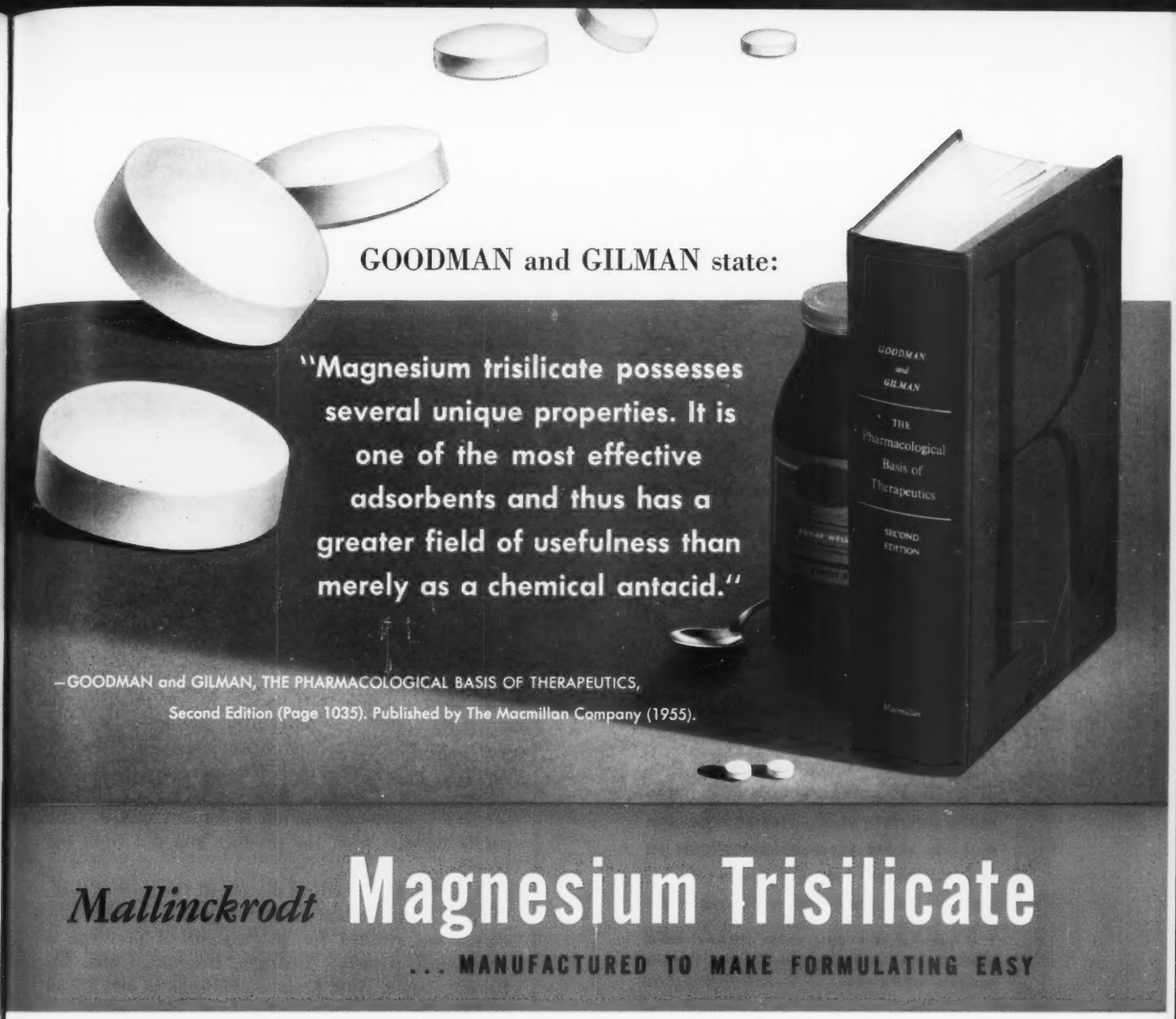
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–GOODMAN and GILMAN, THE PHARMACOLOGICAL BASIS OF THERAPEUTICS, Second Edition (Page 1035). Published by The Macmillan Company (1955).
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(Continued from page 40)

After 30 years, there has now been another about face. In the new 1949 British Patent Act, independent product claims are again permitted.

This somewhat unexpected but logical change in British practice has had a profound effect in foreign patent circles. In many countries now permitting only process claims, the desirability of independent product claims in patents for new pharmaceutical products is being most carefully considered on the ground that in view of present conditions and the enormous expansion of the chemical and pharmaceutical industries, limitation to process protection may be outmoded and actually harmful. The number of new compounds that can be created is so great, the spur of competition is so strong, and the cost of research is so large that no manufacturer rests on his oars after placing a new product on the market, and will himself continue to work on improved methods of production. From the viewpoint of the public interest and the commercial utilization of a new product, all the novelty and advantages actually reside in the product itself, and it is immaterial whether the product is produced by an entirely new reaction or by a conventional reaction. If the reaction process itself is new, this in turn promotes research to utilize it in the production of other new products. It can be argued vigorously that in countries in which patent office practice holds that utilization of a known process to produce a new product is obvious, research is actually stifled. The public benefits from the product and not from the process.

However, as a practical matter, at the present time, the list of important countries where independent claims are granted for pharmaceutical products is very small, namely—Australia, Belgium, Cuba, Gt. Britain, Israel, New Zealand, Philippines and Union of South Africa. In addition there are a few minor countries in Latin America, and those British colonies where British patents can be registered.

Since process claims are therefore the chief mode of protection in foreign pharmaceutical patents, it is important that U. S. patent applications which may later be filed abroad, should be prepared with the foreign requirements in mind—that is a full disclosure of the method even though only the product is claimed.

Importation of Products

This brings up a very important related question for United States pharmaceutical manufacturers, both offensively and defensively, is—do foreign pharmaceutical patents prohibit importation of the product? It can be stated categorically that in Europe and in practically all important countries outside Latin America, they do, and in general process claims are regarded as inherently including the immediate product thereof. The burden of proof as to whether the product is actually made by the claimed process is in general either on the infringer or the patentee, de-

pending on whether the product is new or old. However, in a large number of countries in Latin America, it is considered that process claims do not cover the product, and since product claims are not permitted in most of them, it follows that process claims cannot be used to stop importation of the product. In the absence of decisive patent litigation in these countries, to some extent this is a matter of opinion, and consequently there is a strong tendency to settle important disputes by negotiation.

Working and Compulsory Licensing

The patent laws of practically all the major foreign countries state that an invention should be worked usually within three years from the date of grant. By "working" it is meant carrying out the invention defined in the claims of the patent, within the foreign country, to an extent sufficient to meet the full requirements of the public at a reasonable price—that is, for a pharmaceutical product, it should be manufactured within the country and not imported. The foreign working provisions constitute a further great distinction between United States and foreign practice. The theory is that an unused monopoly is not in the public interest, and in effect hangs like a club over industry for the life of the patent and hinders further development. This, of course, is a debatable proposition. However, as a practical matter, the penalty for nonworking is not too serious. In a few relatively minor countries, a patent may actually be subjected to attack by third parties or invalidated by the patent office or courts for nonworking, but in the important convention countries, the preferred remedy for nonworking is "compulsory licensing." This term has been widely misunderstood and to a considerable extent is not as compulsory as it sounds. Very few compulsory licenses are actually granted in convention countries for patents in most fields, though the situation is somewhat stricter for pharmaceutical inventions. To obtain a compulsory license, a third party must file a petition to establish that he is able to supply the public demand at a reasonable price by manufacture within the country. The patent office, after full consideration of all the facts, including objections by the patentee, has discretion to determine whether or not a compulsory license should be granted and if so, what royalties should be awarded to the patentee. In actual practice, a potential licensee usually approaches the patentee for a voluntary license, and it is only in the event that an amicable settlement cannot be reached, that compulsory license proceedings are begun. The normal period for working for most countries begins three years from the date of grant of the patent. However, in England and in a number of British dominions and possessions, where a pharmaceutical invention is involved, a third party can petition for a license immediately the patent is granted.

(Continued on page 118)

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Industry's Books...

American Drug Index 1957, *by Charles O. Wilson, Ph.D., University of Texas, and Tony Everett Jones, M.S., University of Colorado, 650 pp., J. B. Lippincott Co., Philadelphia, cloth,* **$5.**

The American Drug Index has been prepared for the identification and correlation of the many pharmaceuticals available to the medical and allied professions. All names used for a pharmaceutical occur in alphabetical order with the pertinent data given under the brand name and the name by which it is made available. Data included are generic name, chemical name, manufacturer, pharmaceutical forms, size, dosage and use.

The Chemistry of Petrochemicals, *by Melvin J. Astle, Professor of Chemistry, Case Institute of Technology, 267 pp., Reinhold Publishing Corp., New York, (1956), cloth,* **$6.50.**

This book offers a systematic survey of the petrochemical industry. It describes the preparation and important chemical reactions of industrial chemicals made directly or indirectly from petroleum hydrocarbons. Commercially important chemical reactions as well as many which are potentially of commercial interest, are described. These chemical descriptions are supplemented by useful information on reaction conditions, types of catalysts used, special equipment, and other factors necessary for properly carrying out the processes.

Medicinal Chemistry Vol. III, *346 pp., John Wiley & Sons, Inc., New York, (1956), cloth,* **$10.50.**

This is volume III of a series of reviews prepared under the auspices of the Division of Medicinal Chemistry of the American Chemical Society. Its main purpose is to provide comprehensive and systematic summaries of available data on the biological properties of substances already studied. A chief objective is to include in each chapter references to all the compounds that have been tested for a particular type of pharmacological activity. Contents: Methadone And Related Analgesics, by Thomas P. Carney; Quarternary Ammonium Germicides, by Peter L. deBenneville; Non-Mercurial Diuretics, by Viktor Papesch and Elmer F. Schroeder; Synthetic Analogs of Physostigmine, by Arthur Stempel and John A. Aeschlimann.

The Selling Power of Packaging, *by Vernon L. Fladager, First Ed., 131 pp., McGraw-Hill Book Co., New York, (1956), cloth,* **$3.50.**

This is a view of the importance and dynamic character of packaging and its increasing impact on sales, merchandising, and business decisions. What to look for in good packaging design; how consumer changes are affecting packaging; 20 key business problems packaging will help to solve; efficient integration of packaging with promotion, selling, advertising, and merchandising are some of the important elements of the packaging revolution spotlighted in this book.

Chromium Vol. I, Chemistry of Chromium and Its Compounds, *by Marvin J. Udy, Chemical and Metallurgical Engineer, American Chemical Society Monograph Series, 433 pp, Reinhold Publishing Corp., New York, (1956), cloth,* **$11.**

Written by 30 top experts and edited by one of the country's foremost research and development engineers, this two-volume monograph brings together latest accurate data on the sources, properties, manufacture and use of metallic chromium, chromium alloys and chromium chemicals. Volume I covers the chemistry of chromium and its compounds. Volume II describes the metallurgy of chromium and its alloys Both volumes will prove indispensable to organic, inorganic and analytical chemists concerned with the use of chromium chemicals as catalysts, in organic oxidations, wood preservation, corrosion prevention and their analysis in chemicals, alloys, ores, etc.

Biological Treatment of Sewage And Industrial Wastes, Vol. I — Aerobic Oxidation, *Edited by Brother Joseph McCabe, F.S.C., and W. W. Eckenfelder, Jr., 393 pp., Reinhold Publishing Corp., New York, (1956), cloth,* **$10.**

Volume One, entitled Aerobic Oxidation, records the proceedings of the first Conference on Biological Waste Treatment held at Manhattan College. Thirty-three papers, contributed by recognized authorities and arranged in logical sequence, review the whole subject of biooxidation and present latest trends in research, development and plant design.

Dermatology *by Donald M. Pillsbury, Walter B. Shelley and Albert M. Kligman, 1331 pp., W. B. Saunders Company, Philadelphia, cloth,* **$20.**

Although a massive and authoritative work covering the subject of diseases of the skin in a manner that will please the general medical practitioner and the specializing dermatologist, the book has even more to offer. Outstanding are the first 10 chapters, devoted to the structure and function of the normal skin; these include discussions of the epidermis, pigment formation, keratinization, the permeability of the skin, the nails, the hair, the glands of the skin, the corium and the subcutaneous tissue and the blood vessels and nerves of the skin. Each of these chapters has a concise summary, making it even easier for the investigator formulating topical applications in pharmaceuticals or cosmetics to obtain with least pain the essential knowledge required for the job.

Chromium Vol. II—Metallurgy of Chromium and Its Alloys, *by Marvin J. Udy, Chemical and Metallurgical Engineer, Monograph Series No. 132, Reinhold Publishing Corp., New York, 402 pp., (1956), cloth,* **$11.**

Volume I of this two volume monograph covers the chemistry of chromium and its compounds. Volume 2 describes the metallurgy of chromium and its alloys. Both volumes will prove valuable to organic, inorganic and analytical chemists concerned with the use of chromium chemicals (as catalysts, in organic oxidations, wood preservation, corrosion prevention) and their analysis in chemicals, alloys, ores, waste products, etc.

Wire Brush Surgery, In The Treatment of Certain Cosmetic Defects and Diseases of the Skin, *by James W. Burks, Jr., M.S., M.D., Associate Professor of Clinical Medicine (Dermatology), Tulan-University of Louisiana, 154 pp., Illus., Charles C. Thomas, Publisher, Sprineg field, Ill., (1956), cloth,* **$6.75**

This is the first modern monograph on the new technique for cosmetic improvement of acne scarring and other types of skin disfigurement. Written for dermatologists and other interested physicians, this book describes in detail a method that has been widely publicized and enthusiastically accepted. Chapter II on the Anatomy of the Skin is of particular interest to anyone in this industry who may not be interested in operation technique.

NEW ATLAS TECHNICAL CENTER

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Architect's drawing of new Atlas Technical Center, to be occupied early in 1958. The building, located next to the Atlas Office Building on the outskirts of Wilmington, will cost about $3,000,000.

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For the near future, this will mean more technical help for our present-product customers on their own new products, more ways for them to cut their own research costs through working with us. For the not-too-distant time to come, we hope it will mean more and better Atlas products and services —not only for the many industries we now serve, but for an even broader list of industries and, too, for the creation of new industries.

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Perfumer's Shelf

Ambergris and Grisambrol

The best odor is developed in ambergris tinctures after they have been allowed to stand, with frequent shaking, for a long time. This has a good scientific basis in that autooxidation, promoted by frequent shaking, increases the development of fragrance.

The starting point in ambergris research is the determination of the constitution of its most important constituent, ambrein, present to the extent of 25 to 45 per cent. Ambrein, a tricyclic triterpene alcohol, is a crystalline, practically odorless substance which is apparently the biogenetic parent substance of the ambergris aromatic principle. In the following tabulation of research papers from *Helvetica Chimica Acta*, the work has been done by Ruzicka, Stoll, Seidel, Lederer in association with Firmenich et Cie.

In the paper "A contribution to the knowledge of triterpenes," L. Ruzicka (29:912, 1946) identified ambrein as a doubly unsaturated tricyclic alcohol. E. Lederer, F. Marx, D. Mercier and G. Perot (29:1354, 1946) isolated a ketone from ambergris and obtained ambreinolide by the careful oxidation of ambrein with permanganate. Ruzicka, Durst and Jeger (30:353, 1947) converted ambrein to a degradation product of manool, relating the structure of a triterpene to a diterpene. In 30:1859, 1947, the same investigators determined the exact position of the quaternary methyl group and clarified the structural formula for ambrein. By steam distillation of the ambrein mother liquor, Ruzicka, Seidel and Pfeifer (31:827, 1948) obtained hydrocarbon and oxygenated fractions. A ketone-containing fraction consisted mainly of dihydro-σ-ionone, which was also obtained by oxidizing ambrein with permanganate. The dihydro-σ-ionone has a typical ambergris odor while the other isomers, γ- and β-dihydroionone, have a woody, cedar-like odor. Ruzicka, Gutman, Jeger and Lederer (31:1746, 1948) clarified the relationship between the ring systems of ambrein and the manool-sclareol group. Ruzicka, Durst and Jeger (32:46, 1949) partially synthesized the hydrocarbon ambratriene obtained from ambrein by splitting off of water. Stoll and Hinder (33:1251, 1950) demonstrated the relationship of sclareol to the odoriferous substances of ambergris. The constitution of sclareol was clarified by Ruzicka, Seidel and Engel (25:621, 1942), by Ruzicka and Janot (14:645, 1931) and Ruzicka, Engel and Fischer (21:364, 1938). Sclareol is the essential component of clary and has a weak odor of ambergris. Ozonizing of sclareol gave bicyclohomofarnesal, bicyclohomofarnesol and a hydroaromatic epoxide. A hydroaromatic epoxide with an amgerbris odor was reported by Hinder, and Stoll (33:1308, 1950) and Stoll, Hinder and Palluy (34:1669, 1951). Stoll and Lederer (33:1345, 1950) reported the synthesis of ambreinolide from sclareol. Ozonization confirmed the constitution of the ketolactone $C_{19}H_{30}O_3$ according to Lederer, Mercier and Stoll (34:789, 1951; 34:1664, 1951). Ruzicka, Schenk, Gutmann and Jeger (35:817, 1952) obtained ambreinolide starting from the diterpene alcohol manool. Dietrich and Lederer (35:1148, 1952) started from nerolidol, cyclized the farnesylacetic acid obtained, and obtained a lactone $C_{17}H_{28}O_2$, a racemic ambreinolide, from which the oxide has the same ambergris odor as that from ambrein. Stoll and Hinder (33:1251, 1308) made ozonization derivatives of sclareol and clarified their constitution (36:1984, 1953). The constitution of ambratriene was further clarified by Dietrich, Lederer and Mercier (37:705, 1954) and Stoll (38:1587, 1955) described a new synthesis of dihydro-σ-ionone. By cyclization of this compound, present in natural ambergris, Stoll and Hinder (38:1593, 1955) prepared a new alcohol with a strong, warm ambergris note.

Firmenich & Cie. have been issued the following patents in this field: Swiss 285,126; 299,369; 302,015; 302,014 and West German 860,214. Swiss Patent Applications are 18,269; 18,270 and 20,868.

For the practical perfumer, this work has culminated in the Firmenich "Grisambrol." This is a light colored, thick liquid which has all the nuances of odor exhibited by ambergris, but with the advantage of constant chemical composition and odor value. With Grisambrol, an ambergris note can now be imparted without danger of discoloration to creams and other light colored compositions.

Felton Apple Flavor

The Felton flavor laboratories announce the creation of a new McIntosh type imitation apple flavor. This new flavor product is the culmination of many years of organic chemical research by a team of Felton flavor technologists who used an entirely new approach to the authentic reproduction of the apple aroma. The absence of chemical bytaste makes this flavor material desirable for every conceivable use. This new flavor is available in different concentrations, in both liquid and powder form.

Perfumery Classification

Perfumes are one of the oldest and most important materials for living, procreation, attraction, and revulsion. Perfume odors and fragrances have affected almost all of our lives importantly. They can give rise to emotional responses from the highest order to abject disgust. The history books, the philosophies, and living experiences of peoples of the world from the Egyptians through the Greeks, Romans, the wild Middle Ages, to our present era; and almost every religious cult and belief in the world from the Hindus to the Christians have used fragrances. Christ was brought to the attention of the

world with frankincense and myrrh, and Nicodemus who took him from the cross wrapped him in linens and aloes.

It is true that with modern science today, with chemical research and other developments, aromatic chemical manufacturers now make the finest fragrances in the world. Because of a lack of an odor common denominator, there are many classifications of odors all of which are very confusing. In our exhibit, some seventeen groups of odors cover almost all of the principal odor notes that can be described, and they may be helpful to you.

You will notice them listed: floral, woody, powdery, aldehydic, amber, balsamic, green, spicy, fruity, animal, condiment, honey, leather, tobacco, humus, citrus, lavender, and fougere. You will also find characteristic odors of many different natural floral notes for your study and observation.

Since most people have some knowledge of classic perfumes of the world, or those that are most popular, I give you the following classifications of odors and some of the principal popular products.

SINGLE FLORALS:

Fragrances in this group have a predominating single flower note, such as rose, violet, lilac, lily of the valley, gardenia, jasmin, etc.

Bellodgia	(Caron)
Carnation	
Duchess of York	(Matchabelli)
Lilac	
Muguet Des Bois	(Coty)
Lilly of the Valley	

FLORAL BOUQUETS:

Although all perfumes contain some floral notes, the term floral bouquet is used for fragrances produced by a harmony of floral notes. Other notes may be present, but they are secondary to the floral overtones.

Arpege	(Lanvin)
Rose, Jasmin	
Cotillion	(Avon)
Rose, Carnation, etc.	
Miracle	(Lentheric)
Lilac, Jasmin	
Quelques Fleurs	(Houbigant)
Muguet, Rose, Violet, Jasmin	

ORIENTAL AND SEMI-ORIENTAL:

These fragrances are characterized by rich florals, spicy, woody, and resinous notes, which make them more or less warm, heady, and intense. Additional notes of musk amber, civet, vetyvert, opoponax, etc. are characteristic ofthese blends.

Danger	(Ciro)
L'Origan	(Coty)
Shalimar	(Guerlain)
Toujours Moi	(Corday)

WOODY, MOSSY, LEAFY BLENDS:

Warm aromatic notes such as sandalwood, rosewood, cedarwood, blended with "earthy green" notes of oakmoss, geraniums, lavender, etc. are characteristics of this type of fragrance.

Chypre	(Coty)
Heaven Sent	(Rubinstein)
Mitsouko	(Guerlain)

SPICY, FRUITY BLENDS:

These are derived from spice-giving ingredients such as cinnamon, cloves, ginger, etc., and clean, fresh, citrus notes such as lemon, orange, elemi, etc.

Jicky	(Guerlain)
Femme	(Rochas)

MODERN ALDEHYDIC BLENDS:

This category has purposely been left for the last inasmuch as any of the preceding types of fragrances can and are used as the basic note. The difference in the modern blend being the addition of sparkling top note, heightening at the start all other notes.

Aphrodisia	(Faberge)
L'Aimant	(Coty)
Chanel #5/MA Griffe	(Carven)

—*E. P. Morrish, Firmenich, Inc.*

Citronella Oil Formosa

Formosan citronella oil, one of the most important products and export goods in Formosa, was developed from one root stock of citronella grass, brought from Java about forty years ago. The production of citronella oil in Formosa reached its high peak of 327.2 metric tons in 1939 and decreased sharply by the influence of the World War II. In 1945 the production of the oil was only 29.1 metric tons and then further decreased to the bottom of 11.5 metric tons in the next year. From 1947 the high international market price of citronella oil so strongly stimulated the cultivation of citronella grass that the production of the oil rose remarkably and amounted to its maximum of 2,577 metric tons in 1953. The amount of production estimated for 1955 and 1956 are about 1,200 metric tons respectively. For these years Formosa supplied more than 60 per cent of the world citronella oil production.

Although the total alcohol of Formosan citronella oil is similar to that of Java oil its citronellal content is higher than the latter.

Among its properties, the most characteristic are citronellal and total alcohol contents. In the international market the citronellal content should be higher than 35 per cent and the amount of total alcohol should be more than 85 per cent. Formosan citronella oil not only meets the international standards, but also contains much larger amounts of both citronellal and total alcohol.—Ping-Hsien Teh, *P.E.O.R* 47:421, 1956.

Hyacinth Absolute

Hyacinth, from Dutch bulbs, is a source of a useful perfumery oil. From the right varieties a concrete or absolute can be made on a commercial scale. L. Hoenjenbos and A. Coppens (*Industrie Parf.* 11:185, 1956) report on the chemical composition of the essential oil obtained by steam distillation. These constituents were found to be phenylethyl alcohol, eugenol, methyleugenol, benzoic acid, benzyl alcohol, benzyl acetate, benzyl benzoate, cinnamyl alcohol, cinnamyl acetate, benzaldehyde, cinnamic aldehyde, methyl or ethyl o-methoxybenzoate, methyl N-methyl anthranilate, heptanol, dimethylhydroquinone. Phenylacetaldehydes or its homologs, generally considered to be responsible for the hyacinth odor, are not found in the oil.

Nopyl Acetate

Nopyl acetate, available from the Glidden Company in Jacksonville, Florida, offers promise for commercial application. It has a sweet, fruity and woody note that blends well in soap, it is persistent and does not cause discoloration. It can be used in relatively high proportions in woody, lavender, and fern type perfumes as well as in Cologne, chypre, jasmin, gardenia and similar flower types.

Trexinest (Hynson, Westcott & Dunning) contains in each tablet 1.0 mg. naturally occurring water soluble estrogenic substance and 250 units of lututrin, a uterine relaxing hormone. The combination is intended for the treatment of symptoms associated with the menopausal syndrome and is supplied in bottles of 50 blue, sugar-coated tablets.

Prothromadin (G. F. Harvey Co.) is sodium warfarin, a prolonged action, orally active anticoagulant. It is available in white scored tablets containing 10 mg. and red scored tablets containing 25 mg. as bottles of 25 and 100.

(Continued from page 25)

"At the same time, manufacturing operations have become much more complex through the introduction of automatic equipment and because of more complicated drug formulations. The maintenance of quality standards under these conditions requires the use of tools of analysis more powerful than was the case earlier. Statistics is one of these more powerful tools."

According to Dr. Brumbaugh, at least sixteen different types of statistical analysis play important parts in the manufacture of pharmaceuticals, ranging from scientific sampling plans for raw materials to forecasting for the sales department and conducting operations research on management activities.

Under Control, the types of statistical analysis are: sampling procedures to insure representativeness; establishment of variability pattern of tests; and continuous policing of equipment, materials, and analysts in terms of variability patterns. Under Development and Research: design and analysis of experiments; cooperative activity between scientists and staticians. Under Engineering and Maintenance: analysis of variability patterns; job analysis; and work sampling. Under Sales Department: forecasting; and market analysis. Under Management: operations research.

Dr. Brumbaugh said: "We believe that in any operation the responsibility for quality should rest with the Production Department and not with the Inspection Department. This principle is doubly applicable in pharmaceutical production where problems of sterility, cleanliness and all of the things that are implied in the expression, 'good pharmaceutical practice' are prime requisites. However, we also recognize that the Production Department cannot discharge its quality responsibility unless it has immediate and precise information on which to base action. For this reason alone, in-process controls are necessary and the controls we have found to be most efficient are statistical controls."

"You should need fewer executives, supervisors and quality control people, depending on the degree of automation within your pharmaceutical plant," according to Charles F. Hautau, president of Hautau Engineering Company. "By the same token, you'll need more engineers and maintenance people."

Unions, in Mr. Hautau's opinion, have proved cooperative in most cases with plant management over the question of automation. This is "because enlightened unions now know that we have attained our excellent standard of living, in large part, because of industry's efforts to produce better goods for less money."

Automation's development in pharmaceutical companies is creating a need for more highly-trained technicians than ever before, said E. L. Baab, corporate training manager of the Olin Mathieson Chemical Corporation. According to Mr. Baab, "today's competitive markets demand that we be as effective as possible in the use of our employees since

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Ozokerite Waxes Both White and Yellow Ozokerite in a variety of melting points are available. We believe oil retention properties to be better than any other similar products commercially available.

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Crystal "E" Oil This 70 Viscosity Technical White Oil (meeting U.S.P. Acid Test) is considered more advantageous for many cosmetic formulations than higher viscosity N.F. Oils.

Special Petrolatums If natural Petrolatums will not "do the job", Investigate our Special Petrolatums tailored to individual requirements.

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a large portion of our budget is consumed as payrolls for this group. We must also get the maximum use out of our machines and equipment because a large portion of our capital investment is in machines and equipment."

Mr. Baab said "a large number of training programs of the past have approached the problems in our plants from a very impractical viewpoint." He added the need now is for "a development and training program which meets the pertinent plant needs at the moment and tries to anticipate some of the future problems which will be encountered."

He suggested that each department within a plant might require its specialized training program, and added: "We feel that the appointment of three-man training committee usually composed of a superintendent of production, superintendent from the services group, and a superintendent from the maintenance group will be able to steer and control the program to keep it practical, and guide it so that the maximum effectiveness in the plant is achieved." Mr. Baab said "this may be somewhat a surprise in that we are placing the prime responsibilities for training with the line people." But, he added, "We believe that no one in the plant will know more about the problems confronting them than the line people themselves."

"It is interesting to note that in one of the plants in the Squibb Division, this type of organization has been in operation for a considerable period of time and the Training Committee has pretty well formulated the development and training activities for the next year and a half. However, in observing this program the plans are being continually modified and changed as the program progresses."

"The financial scene today is one of a business capital spending boom and a severe credit squeeze, said August Ihefeld, president of the Savings Banks Trust Company. "A cutback in business outlays for plant and equipment will follow sooner or later. The prospect of a business recession must be envisioned in the financial scene of tomorrow, together with measures that may be invoked to sustain prosperity or to prevent recession from turning into depression. Against this background, let us consider now the financial outlook for the pharmaceutical industry.

"The pharmaceutical industry, experience has demonstrated repeatedly, is less affected by fluctuations in the general economy than most other industries. Internal competitive conditions in the pharmaceutical industry and individual product developments often prove far more important than changes in the overall business activity in shaping the course of sales and profits of pharmaceutical manufacturers.

"At the same time, it is well to remember that it is easier to expand sales and secure remunerative prices for your products when employment and personal incomes are high, and when people are not seeking to

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economize in their personal spending. Hence, should the current boom, sparked as it is by business plant and equipment spending, be followed after six months or a year by a recession caused by reduced expenditures upon plant or for home building, the pharmaceutical industry could be affected adversely."

Pointing out that drug capital spending for 1956 was scheduled to be 39 per cent greater than in 1955, which exceeds the 30 per cent increase in planned spending in 1956 for new plants and equipment for all business, Mr. Ihefeld said "A more immediate and pressing problem for the pharmaceutical industry, like many others, is the extent to which plant and equipment expansion programs should be pushed at this time."

"The pharmaceutical is fortunate in that a considerable part of the outlays for future expansion takes the form of research and product development that can be charged off against current taxable income," continued Mr. Ihefeld. "In a period of high income taxation, this is a great advantage. The record has amply demonstrated that well planned and efficiently conducted research programs pay off very handsomely, and there is nothing in the outlook that calls for a contraction of such programs.

"The case is not so clear for further plant and equipment expansion programs, particularly where there are doubts about the future demand for the products to be manufactured by these facilities.

"Corporate profits in the aggregate this year are showing only a *small rise* over the 1955 total, despite the record volume of expenditures for plant and equipment expansions that have been carried out. This calls for a critical reconsideration of current spending programs especially in the industries where profits do not keep pace with expanding investment.

"It may be that, confronted with rising wages and costs, and fearing less favorable tax treatment in the future, while recalling the favorable experience of those companies which have expanded capacity in the past decade and a half, some business managements are being stampeded into embarking upon ambitious expansion programs without full consideration of the difficulties or pitfalls. Projection of sales and profits based upon the expansion plans of one company may not be realized where the other companies in the industry have ambitious expansion plans of their own. Realization of a number of expansion programs together could result in saturation of markets and over production.

"Even more questionable is the adoption of expansion programs without giving adequate thought to the difficulties and increased cost of financing under existing conditions. There is reason to believe that financing difficulties are being given too little weight in some instances. Borrowings of 25 representative member companies of your association increased from $680 million to $747 million during 1955, and a much

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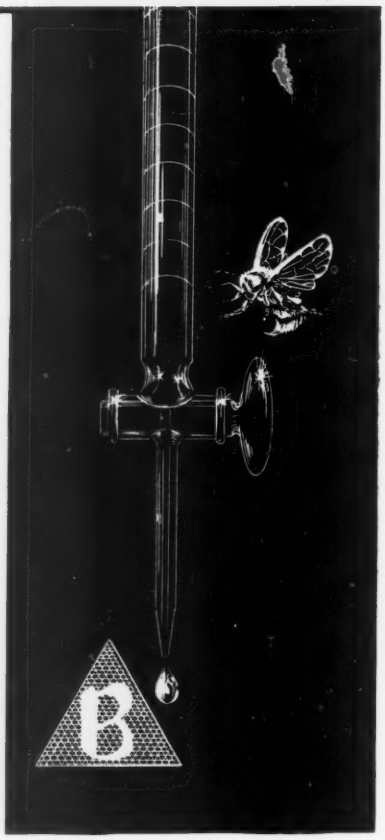

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sharper increase is likely in 1956. Yet these 25 companies had a combined liquidity ratio, of cash and marketable securities to current liabilities, of 94 per cent at the end of 1955, down from 105 per cent at the end of 1954. The liquidity ratio is probably materially lower today.

"The stark fact is that all the demands currently being made upon the capital market simply cannot be satisfied. Unless aggregate borrowing requirements are reduced, the credit stringency could become more acute and interest rates could advance still further. This could make it necessary for a growing number of companies, particularly the smaller concerns and others whose credit is not the strongest, to accept burdensome terms of financing, or to impair their liquidity to a dangerous extent by using up liquid resources on hand."

SOCIETY OF COSMETIC CHEMISTS

(Continued from page 27)

included a comprehensive list of nonionics as well as preservatives. Preservatives included the p-hydroxybenzoates, usnic, sorbic, benzoic and dehydracetic acids, and several antibiotics.

W. L. Courchene, the author of **The Electron Microscope, A Tool for the Study of Hair Fibers,** is a member of the Research and Development Department of the Procter and Gamble Company.

Although the electron microscope has been in use for a number of years, it has seldom been applied to the study of human hair. It represents a much needed addition to the techniques of light microscopy and X-rays since it bridges the large gap in magnification between these two methods. Three basic sample preparation techniques of replication, ultrathin sectioning, and degradation were described and the kinds of problems to which these techniques may be applied were discussed. Several electron micrographs were shown to illustrate what can be observed when these three techniques are applied to human hair.

Gas Chromatographic Analysis of Aerosol Products was presented by *M. J. Root and M. J. Maury.* M. J. Root, who delivered the paper, is Technical Director of G. Barr & Company.

Gas-liquid partition chromatography provides an easy, rapid and particularly suited technique for the analysis of the mixtures of liquefied gases and low boiling liquids that are found in aerosol products. This method, first used by James and Martin in 1951 for analysis of fatty acids, can be used in many ways in the aerosol industry:

1. Analysis of propellent mixtures, both the chlorofluorinated hydrocarbons and the hydrocarbons.
2. Quality control of aerosol products.
3. Analysis of both liquid and gaseous phases of aerosol products.
4. Determination of air in liquid and gaseous phases.

(Continued on next page)

Scent Change Wins Shampoo Top Spot*

ATLANTIC CITY, N. J.—A change in the fragrance of a shampoo used in a panel test boosted it from last place to first and, although its other properties remained the same, the panel members believed that many of its other qualities were improved as well.

This was reported by Dr. Donald H. Powers of the Warner-Lambert Pharmaceutical Co. before a symposium on perfumes, cosmetics and soaps at the national meeting of the American Chemical Society here late last month.

"In this type of panel testing," Dr. Powers explained, "the same shampoo with improved fragrance is reported as rinsing better, lathering better and giving more luster and shine. This demonstrates a clear case where the same technical activity is reported as more effective when only the fragrance is improved."

While shampoos have built up $120,000,000 annual sales, Dr. Powers concluded, "there are still a great many problems to be solved and many, many tests to be run before we can pre-analyze and predict the success and acceptance of a new shampoo formulation."

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Deodorant
Zinc oxide neutralizes perspiration acids.

Sunburn-ray screen
Zinc oxide is opaque to ultraviolet light.

2. PHARMACEUTICAL PROPERTIES

Zinc oxide is widely used in dermatology in the form of zinc oxide ointment and calamine lotion.

It owes its popularity, according to one recognized authority,* to a combination of at least three qualities: it is non-toxic, protective and mildly astringent.

* *The Dispensatory of the United States of America, 1950 Edition*

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3. Sample Inlet
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   - Liquid
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   a. Solid Phase (Carrier)
   b. Liquid Phase
5. Detector
6. Recorder

Special techniques must be developed for the introduction of the aerosol sample. Such samples can be introduced into the column as either a liquid or a gas. The liquid sample required is only from 0.005 to 0.05 cc. and the gas sample is from 1 to 25 cc. The sample must pass through the chromatographic column as a gas.

Charles L. Teitelbaum, Principal Chemist of Battelle Memorial Institute, presented **Gas Partition Chromatography—Application to Essential Oils and Other Volatile Materials.**

The new technique of gas chromatography has great potential for routine analysis and control as well as research on essential oils, aromatic chemicals, and other volatile materials. There are basically two ways that this tool can be used. In one, the recording or "chromatogram" can be used to give a qualitative and quantitative analysis of the individual components or a qualitative identification of a complex mixture. Essential oils can be characterized as to type of oil, origin of production and adulteration.

The second way to use this technique is as an isolation tool for components of complex mixtures. In this use, the chromatogram serves largely as a guide to operation of the sample-collection system, and such techniques as infrared spectroscopy are used to identify the isolates. For such materials as essential oils, gas chromatography must be used in conjunction with other separation techniques in order to produce isolates sufficiently pure for identification. Some preliminary work on the application of this tool to the question of the identity of citronellol and rhodinol was presented.

NEW DRUGS OVER-THE-COUNTER

(Continued from page 33)

to know such things as the numbers treated, the diagnoses, the rate of onset of improvement, average duration of treatment, etc. Practicality like science also feels that testimonials are of little value and that there is no substitute for medical data.

Considering Side Effects—Although blood counts and urinalyses are important to have on a great ma-

jority of the patients when a drug is being considered for over-the-counter use we don't want a BSP, chloride level, NPN, CO_2 combining power, etc., on each person. We do want some detailed observation on the gastro-intestinal tract if diarrhea occurs frequently. We do want some blood studies if several cases of leukopenia or stomatitis have been found. We do want some liver function studies if there have been several cases of unexplained jaundice.

One could go on to innumerable examples, but the preceding should serve as a general guidepost to the problem. Remember, practicality without law and science is meaningless. Science and law without practicality is also an empty shell. To achieve the goal of protecting the public and yet not deprive them of a therapeutic benefit requires an admixture of all three items in their proper proportion. Each must be satisfied, and each is dependent on the other. The Food and Drug Administration is cognizant of all phases and we daily integrate them into a single unit.

Let us take a moment now to briefly consider the entire new-drug procedure as it exists today and how the introduction of an over-the-counter medicament fits into the scheme of things. First off, when a drug emerges from the chemical laboratory and is shown to possess physiologic activity it may pass the barrier of extensive pharmacologic testing and be admitted for trial in humans. It is then tested by investigators properly qualified to evaluate the drug in those patients who may be benefited. If the initial trials are satisfactory the studies are broadened and the results then submitted to the Food and Drug Administration as a part of a "new drug" application. If this application is declared effective the product is marketed and more widespread use ensues on a prescription basis. Eventually, a petition seeking prescription exemption requirements may follow and if this is granted on the basis of the data submitted the drug is still considered for a time as a "new drug" for this particular purpose. Naturally, not all over-the-counter drugs must go through these aforementioned stages because if prescription-exemption requirements are met a new drug application may contain recommendations for use in this manner.

I realize that the foregoing is common knowledge to most of us, but do we ever stop and think of what these few sentences mean in terms of mutual cooperative efforts and public benefit and safety? *Each* stage involves a tremendous amount of study, work and cooperation on the part of medicine, pharmacy, the pharmaceutical industry and government. Each stage must be approached slowly and with a careful study of the facts preceding it. The prescription-exemption procedure is an exceedingly important item along this chain of events and it is here that your particular responsibility lies. The moral liability of showing a drug to be safe for non-medically supervised use is a great one.

We are entering at present a great era of specific chemotherapy, and as a result the scientific aspects

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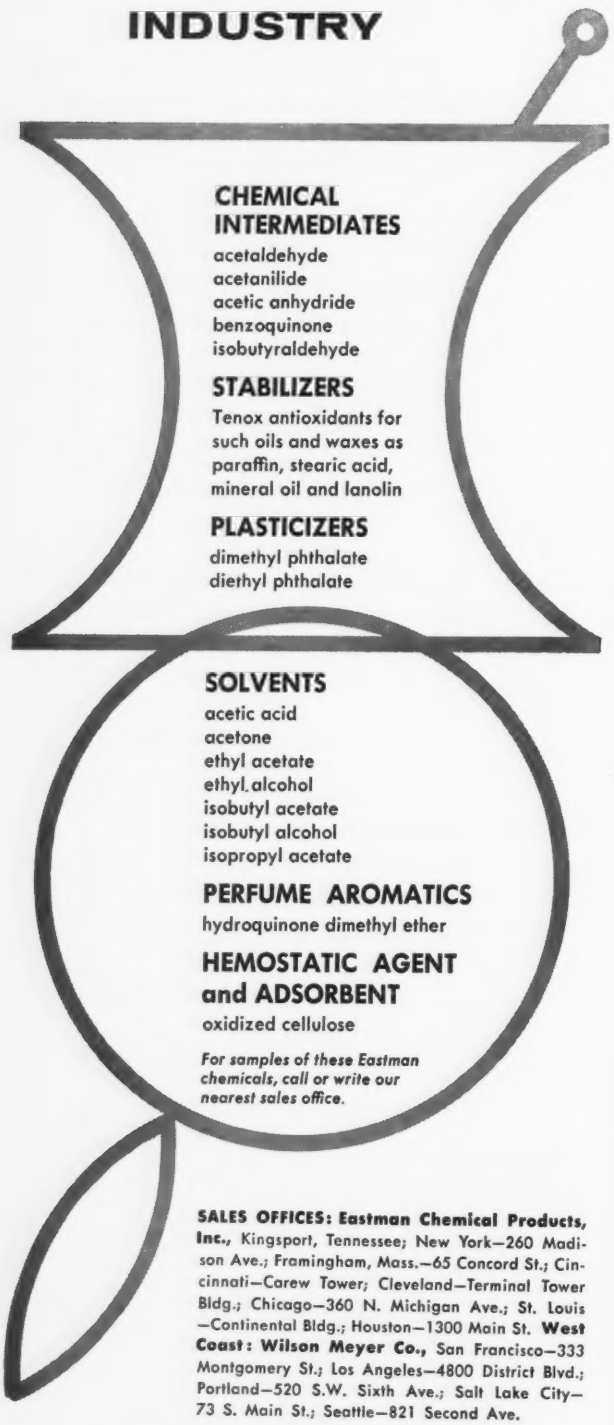

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of your entire field are becoming increasingly complex. Accordingly, I would like to stress that there is, and will be in the future, no substitute for adequate competent scientific help and advice from the laboratory and from clinical medicine.

EVALUATING LOW SENSITIZING PERFUMES

(Continued from page 35)

usefulness and safety of these Chemoderms.

The materials used in these investigations were the standardized Chemoderm perfume compositions listed below by research number with their main odor characteristics designated. Each of them, by consumer panel test studies, either met or exceeded acceptability when panelled against popular odors presently used in the most widely, publicly accepted cosmetic creams.

CHEMODERMS

839 — Aldehydic, fresh
840 — Lavender, mossy, woody
841 — Flowery, jasmin
842 — Spring flowers
843 — Fresh, green
844 — Mossy, powdery
845 — Leafy, green
846 — Classic rose
847 — Modified pale rose
848 — Precious wood, powdery

Animal Studies

Animal sensitization studies were conducted in two series on guinea pigs using a modified Landsteiner technique[6,7,8]. In the first series of tests, 0.5 per cent concentrations of Chemoderms 840, 842, 846, 849 were compounded in a bland base cream formula, as shown:

CREAM FORMULA

	Parts by Weight
Beeswax (sunbleached, pollen free)	96.0
Mineral Oil	300.0
Butoben (Merck)	0.3
Glycerine CP	5.0
Borax CP	6.0
Distilled Water	188.0

As a positive control, a freshly made mixture of the base cream and 0.1 per cent concentration commercial dye grade paraphenylenediamine was used as well as a freshly made solution of 0.1 per cent of the dye in distilled water. For further control, the unperfumed bland cream was studied.

In a second series, 0.5 per cent concentrations of Chemoderms 839, 841, 843, 844, 845, and 847 in U.S.P. sesame oil were used. Concomitant control studies of sesame oil alone, and a freshly made 0.1 per cent solution of commercial grade paraphenylenediamine were also conducted.

The pigs received initial intradermal injections of 0.05 ml. of the respective material, and then received 0.1 ml. every other day for nine injections over a period of 21 days. Three weeks later, a challenge injection of 0.05 ml. was given. Readings were made 48

hours after each injection. Responses were measured in terms of erythema, induration, and vesiculation.

These guinea pig intradermal tests showed that none of the Chemoderms in either the base cream or sesame oil were capable of inducing skin sensitization, or possessed inherent sensitizing properties under the conditions of the tests. The paraphenylenediamine in both the base cream and distilled water produced skin responses, with breakdown of tissue, indicating that sensitization had been produced.

Animal studies using guinea pigs are not reliable for predicting human sensitization[9], however, in an exploratory development program of this type, the guinea pig serves a useful function in determining if the test materials were strong sensitizers.

A modified, repeated insult patch test was conducted with human subjects[10]. A 2.0 per cent concentration of each Chemoderm, approximately four times normal usage concentration in the cream formulation, was used. The Chemoderms in cream and the unperfumed cream used as the control, were patch tested at the same time.

This method involved applying a multiple patch containing each of the Chemoderms in the base cream, and the eleventh patch, the unperfumed cream, as a control to the skin of the human subjects every other day for three times a week until ten insult applications were made. The Chemoderms containing 83 nonrepetitive perfumery components remained in contact with the skin 20 to 24 hours after which they were removed and readings made one hour after removal. They were again read before reapplication of the next insult patch. A challenge patch was applied ten days after the last of the ten initial insult patches. Subjects who showed questionable readings to any cream following the challenge were repatched to that cream following an interval of three or four days.

The multiple patch[11] used for this simultaneous testing was a washable elastic bandage on which was attached eleven individual gauze squares spaced in an area of 2½ by 4½ inches on one end of the elastic bandage which was four inches wide and 20 inches long. Four hundred (400) milligrams of cream was placed on each individual gauze patch. The patches were then placed on the inner aspect of the arm, and held in place by wrapping the free end about the arm. This was then covered by a Surgitube® covering.

The repeated applications were rotated from the right to the left upper arm of each subject. A new set of patches was used for each application. A template, of reclaimed x-ray film, having eleven openings, permitted accurate reading of the areas of the arm insulted by each of the Chemoderms.

The modified repeated insult patch test as here described, using a closed patch, must be recognized as a stringent test procedure and would undoubtedly pick up materials that have even slight inherent sensitizing potential.

Fifty-two (52) human subjects would seem to invite criticism because of the small number. It must

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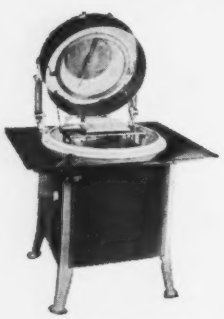

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be realized that this designed test, repeatedly insulted the 52 subjects with 10 perfume compositions containing 83 non-repetitive perfumery components involving more than 6000 exposures. The mathematical consideration of chance for sensitization reaction reaches enormous proportions. If any of these components or their Chemoderm combinations would induce sensitivity, they probably would have indicated it, had they had such a biological potential.

The results of this study indicated that none of the Chemoderm formulations produced sensitization in any of subjects tested under the exacting conditions of the test.

CRITERIA USED IN READING:
0 No visible reaction
\+ Erythema
++ Erythema and edema
+++ Erythema, edema and vesiculation

TABLE 1.

Results of repeated insult patch tests with creams containing two per cent by weight of each of the Chemoderms. Cream without Chemoderm used as control.

Chemoderm Odor	Subjects	Number of Patches	Scoring 0	+	++	+++
		Insult Patches*		(**)		
839	52	500	500	—	—	—
840	52	499	496	3	—	—
841	52	500	500	—	—	—
842	52	498	495	3	—	—
843	52	498	495	3	—	—
844	52	499	498	1	—	—
845	52	500	500	—	—	—
846	52	500	499	1	—	—
847	52	498	498	—	—	—
848	52	500	500	—	—	—
Control	52	504	500	4	—	—
		Challenge Patches				
839	52	52	52	—	—	—
840	52	52	52	—	—	—
841	52	52	52	—	—	—
842	52	52	52	—	—	—
843	52	52	52	—	—	—
844	52	52	52	—	—	—
845	52	52	52	—	—	—
846	52	52	52	—	—	—
847	52	52	52	—	—	—
848	52	52	52	—	—	—
Control	52	52	52	—	—	—

*Five subjects did not receive patches on several occasions.
**Each of these observed reactions were on different individuals and occurred at different times during the test.

Commercial In Use Test Study

These Chemoderms introduced into a commercially available pre-tested cosmetic product, could now be investigated in a control test market under actual use conditions. This test would give even more information about the skin tolerance of these Chemoderms. It was deemed advisable to promulgate two wide spectrum tests on two groups of ultimate consumer users of such cosmetics.

These tests were conducted with the complete collaboration of Luzier's, Incorporated of Kansas City, Missouri, and with the wholehearted cooperation of their officers and technical staff. This organization

markets especially formulated cosmetic products which are designed to eliminate ingredients which provoke a dermatological response when used topically on a given individual. They have had many years of exacting years of exacting experience in this field.

Their extensive I.B.M. files and knowledge of their patrons' cosmetic idiosyncrasies permitted us to choose two elaborately select groups for participation study.

Use Test on Perfume Sensitive Women

The first group—108 women who were known to have perfume idiosyncrasies—was "allergic" to perfume. This, "sensitive to perfume" group was selected because they had been diagnosed as perfume sensitive by a dermatologist, allergist, or private physician; or because of an individual experience of skin trouble which stayed in abeyance since their use of unperfumed cosmetics.

No blank control was used because these women had been using an unperfumed, specific type of cleansing facial cream from one to twenty years.

In spite of their natural reluctance to use any product containing perfume, we were able to induce 67 women of the group to use, during the test, their personal type of facial cleansing cream that they had been using heretofore, perfumed with 0.15 per cent by weight of the rose scented Chemoderm 847. The group chosen represented women from all over the United States to permit the use of the product under varying weather conditions. Chart 2 demonstrates age, the varying skin, hair, and eye coloring as well as skin texture.

The results of this experiment for the facial cream are detailed in Table 2 for 2100 applications. Of these 67 women, only two had a dermatological response.

Comment on First Consumer Use Test

We felt that this test was critical because the 67 women studied in Test 1 were women who were considered perfume sensitive. They were representative of this class of women who have perfume idiosyncrasies. These women would be expected to have a dermal response from perfumes. Since only two of this group had a dermal response to the Chemoderm 847, this perfume could be considered to be low in skin sensitizing power.

The significant characteristics and geographic distribution are shown in chart 3.

Second Consumer Use Test of 962 Women

In planning the second test, 1200 women were invited to collaborate.

Nine hundred sixty-two (962) were induced to complete the test. They were a comprehensive test group of women throughout the United States. The letter of request and instructions sent to each of these women follows.

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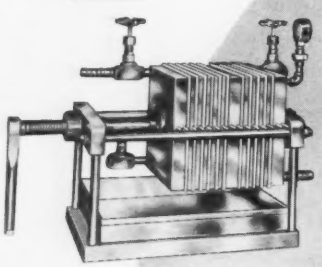

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CHART 2.

Geographic distribution of 67 perfume sensitive women studied in Test 1 and information regarding their skin characteristics.

GEOGRAPHIC

Arkansas	2	Kentucky	1	Oregon	1
Alabama	7	Louisiana	2	Pennsylvania	4
Arizona	1	Michigan	2	Tennessee	3
California	4	Mississippi	1	Texas	8
Florida	4	Missouri	7	Utah	2
Georgia	2	Nebraska	2	Washington	1
Illinois	1	North Carolina	4	Wyoming	2
Indiana	3	Ohio	1	Virginia	1
Iowa	1	Oklahoma	1		

AGE

	%
Under 20	7.5
20-30	42.0
30-40	25.4
Over 40	25.4

SKIN COLOR

	%
Fair	28.0
Medium	31.3
Olive	7.5
Sallow	7.5
Light Olive	3.0
Ruddy	3.0
Other	19.7

HAIR COLOR

	%
Bromn	62.7
Blonde	13.4
Auburn (Titian)	11.9
Black	6.0
Grey—White	6.0

TYPE SKIN

	%
Normal	28.4
Dry and extremely dry	38.8
Oily and extremely oily	22.4
Other	10.4

TEXTURE

	%
Medium	70.0
Fine	21.0
Coarse	9.0

NUMBER OF TIMES PER DAY CLEANSING CREAM USED

	%			
Once a day	37—55.2	Times used	—	777
Twice a day	27—40.3		—	1134
Three times a day	3— 4.5		—	189
				2100

TABLE 2.

Results following 2100 applications on 67 perfume sensitive women studied in Test 1 with statistical significance.

Chemoderm No.	Perfume Sensitive Subjects	Dermal Reaction	Statistical Calculation of "No Reactions" in the General Population*
			%
847	67	2	93

*Statistical calculation based on five per cent probability level.[12]

fume sensitive women as well as 608 (62.3 per cent) women who reported either perfume sensitivity or dermal response to other allergens.

The information revealed further, interesting, skin response data as shown in chart 4.

The results of this usage test on 962 women are tabulated in Table 3.

Table 4 shows the results on 608 women studied who had a prior history of allergy.

Table 5 shows the results on 354 so-called normal women. Here, the number of reactions was extremely low (0.85 per cent).

Only 354 could be considered as not having some past history of dermal allergy.

Again, no control cream was used, because these 962 women received the same cream they had been using except that now it was perfumed with one of the ten Chemoderms at a rate of 0.15 per cent by weight.

Exacting and careful chemical examinations and

CHART 3.

Geographic distribution of 962 women studied in Test 2, and information regarding their skin characteristics.

GEOGRAPHIC

Alabama	29	Maryland	5	Oregon	9
Arizona	9	Massachusetts	7	Pennsylvania	31
Arkansas	18	Michigan	12	Rhode Island	1
California	65	Minnesota	2	South Carolina	8
Colorado	16	Mississippi	26	South Dakota	2
Connecticut	1	Missouri	49	Tennessee	25
Delaware	1	Montana	2	Texas	131
Florida	40	Nebraska	34	Utah	17
Georgia	23	Nevada	2	Vermont	0
Idaho	6	New Hampshire	0	Virginia	13
Illinois	34	New Jersey	3	Washintgon	9
Indiana	33	New Mexico	4	West Virginia	4
Iowa	24	New York	14	Wisconsin	17
Kansas	26	North Carolina	58	Wyoming	2
Kentucky	27	North Dakota	4	Washington, D. C.	2
Louisiana	23	Ohio	37	Hawaii	5
Maine	0	Oklahoma	48		

AGE

	%
Under 20	0.1
20-30	4.99
30-40	24.11
Over 40	70.27
No answer	0.53

SKIN COLOR

	%
Fair	33.89
Medium	32.64
Olive (Dark)	18.92
Sallow (Pale)	9.15
Ruddy	4.16
Other	1.24

HAIR COLOR

	%
Brown	53.11
Blonde	11.01
Auburn (Titian Red)	8.10
Black	6.44
Grey—White	19.95
No answer	1.39

TYPE SKIN

	%
Normal	24.74
Dry and extremely dry	65.59
Oily and extremely oily	8.42
Other	1.25

TEXTURE

	%
Medium	70.17
Fine	25.57
Coarse	3.12
Other	1.14

NUMBER OF TIMES PER DAY CLEANSING CREAM USED

Once a day	538	Times used	11,298
Twice a day	378		15,876
Three times a day	15		945
Use not stated	31		0
		No. of applications	28,119

CHART 4.

Information regarding the 962 women studied in Test 2, showing those perfume sensitive, and those having a prior history of dermal allergic response.

Chemoderms	Total Individuals Studied	Prior Perfume Sensitive	Prior Dermal Response to Perfume and Allergens	No Prior Dermal Allergy
839	89	12	61	28
840	91	24	63	28
841	103	22	59	44
842	98	26	59	39
843	94	15	55	39
844	96	26	57	39
845	99	19	63	36
846	98	16	65	33
847	97	23	65	32
848	97	22	61	36
Total 10 Chemoderms	962	205	608	354

assays were made to insure that all of the cream components used in this test met the most exacting standards of U.S.P., N.F., or the more, accurate, and widely used standards of The Toilet Goods Association.

The reactors in the group of women with positive, past history of dermal allergy was quite low and roughly corresponds to the number of reactors in the

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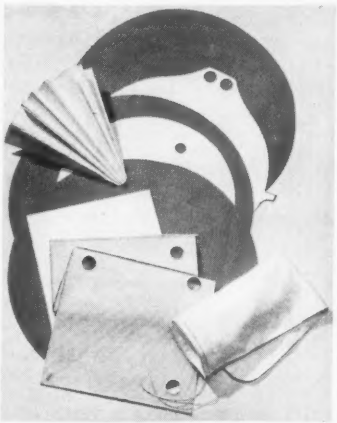

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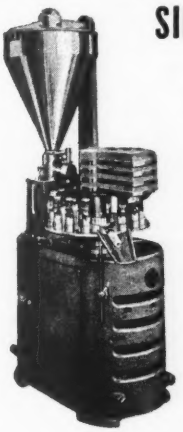

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TABLE 3.

Results on 962 women studied in Test 2, with statistical significance.

Chemoderms	Number of Subjects	Dermal Reaction	Statistical Calculation of "No Reactions" in the General Population*
		%	%
839	89	2.2	94.7
840	91	3.3	93.0
841	103	6.8	88.3
842	98	5.1	90.5
843	94	3.2	93.2
844	96	3.1	93.4
845	99	2.0	95.2
846	98	3.1	93.5
847	97	2.1	95.1
848	97	2.1	95.0
Total 10 Chemoderms	962	3.3	96.3

*Statistical calculation based on five per cent probability level.

TABLE 4.

Results on 608 women studied in usage test—Test 2—who had prior history of perfume and dermal allergy.

Chemoderms	Number of Subjects	Dermal Reaction
		%
839	61	3.3
840	63	3.2
841	59	10.1
842	59	8.5
843	55	5.5
844	57	5.3
845	63	3.2
846	65	3.1
847	65	3.1
848	61	3.3
Total 10 Chemoderms	608	4.8

Statistical significance at a five per cent probability level of no reactions: 94.7 per cent

TABLE 5.

Results on 354 women studied with no prior history of dermal allergy, with statistical significance.

Chemoderms	Number of Subjects	Number of Subjects Showing Dermal Reaction on Usage Test
839	28	None
840	28	One
841	44	One
842	39	None
843	39	None
844	39	None
845	36	None
846	33	One
847	32	None
848	36	None
Total 10 Chemoderms	354	Per cent Response 0.85 per cent

Statistical significance at a five per cent probability level of no reactions: 98.9 per cent

group of similar women in the first use test.

The data established in these tests indicates statistically on the five per cent level[12] that 94.7 per cent of the women who are sensitive to perfumes or have other allergies could use these Chemoderms without reaction. On the same population group, we could expect a minimum of reaction of 5.3 per cent.

By the same type of analysis, it is probable from the statistical data established on the five per cent level that the women who did not have a history of perfume sensitivity or dermal allergy, could use these Chemoderms, and we would expect a reaction of 1.1 per cent; or in the total population, 98.9 per cent could use these Chemoderms without dermal reaction.

Accordingly, we feel that the Chemoderms can be

considered to be relatively safe perfumes for widespread use.

REFERENCES

1. Klarmann, E. G., *Am. Perfumer Essent. Oil Rev.*, page 425, Dec. 1954.
2. Sulzberger, Marion B., *Dermatologic Allergy*, New York, Charles C. Thomas Press.
3. Draize, J. H., *Food, Drug, Cosmetic Law Journal*, October 1955, p. 722.
4. Haggard, H. W., *Handbook of Cosmetic Materials*, Greenberg & Lester, pages 14, 16, and 17, Interscience, New York, 1954.
5. Rothman, S., *Physiology and Biochemistry of the Skin*, University of Chicago Press, Chicago, 1954.
6. Landsteiner, K., and Jacobs, I., *J. Exp. Med.* **61**, 643, 1935.
7. Draize, J. H., Woodward, G., and Calvery, H. O., *J. Pharmacol. Exp. Therap.*, **82**, 377, 1944.
8. Hazleton, L. W., *J. Soc. Cosm. Chem.*, **6**, 3, 1955.
9. Traub, E. F., Spoor, H. J., *J. Soc. Cosm. Chem.*, **6**, 3, 1955.
10. Shelanski, H. A., and Shelanski, M. V., *Proc. Sci. Sect.*, TGA: **19**, 46, May 1953.
11. Osbourn, R. A., and Tusing, T. W., *A.M.A Arch. Dermatol.* (in publication).
12. Henderson, C. R., and Riley, E. C., *J. Investig. Dermat.*, **6**, 227 (1945).

FUNCTIONS OF A COSMETIC RESEARCH DEPARTMENT

(Continued from page 37)

at all. In a striking example recently reported, two identical shampoos, differing only in the irodor were panel tested and one was found to be distinctly preferred to the other on the basis of allegedly better performance. Attempts are now being made to set up objective performance tests that might predict consumer preference, but progress is necessarily slow. Incidentally, advertising appeal should not be minimized in making a consumer panel test and it would be useful to check product acceptance in the development stage with and without the advertising pitch to determine the effect of the latter on acceptance. Once the product is in production it would be useful to have a performance test included in the control check.

When the product undergoes pilot plant investigation, it should be fully studied until satisfactory and uniform production can be assured. This investigation is best continued into early production batches, and this must be done on a fully cooperative basis. The research man must know as much of the production process as he can absorb; the production man must know the product as far back in the development stage as possible, preferably from the bench up. It is important only that the knowledge be acquired and be ready for use.

Significant standards must be set up for the raw materials, the process and the finished product so that effort will not be wasted in merely adding useless numbers to a record. Control methods and standards are especially important, for rigorously controlled continuous production is seldom feasible, and limits of permissible variation should be known. As a corollary, trouble shooting is a research function, the individual who developed the product and nursed it to maturity being usually best qualified to seek out the reasons for troubles and to suggest corrections. Here again, the production group will be qualified to get operations back in the groove if cooperation during development has been whole-hearted.

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from its original conception to the finished production package and he will also know and put his own interpretation on consumer response, competitive products and their relationship between claims and probably effectiveness. He will know, as his training permits, the significant physics, chemistry, physiology and dermatology applicable to his product. If these are then set forth clearly, they will be of inestimable value indirectly, or even directly in copy ideas, to the advertising department or agency.

The Research Staff

What staff is required to carry out these research functions? A surprising proportion of the duties that have really only been touched upon can be embodied in one well-qualified person, but this is only approximately true in even a quite small organization. Instead of exact knowledge, approximations will be made to do; spot checks will be made to serve in place of complete analyses; panel tests cannot be done. Temporarily, vigorous promotion may overcome technical uncertainties. In large operations, however, where substantial outlays are contemplated for even the initial promotion, the stakes are too high to permit uncertainties where they can be resolved and enough manpower must be available to do the needed job.

In a research group of some size, a useful type of job allocation may be in terms of products, each person or group being wholly responsible for one or more related products. Thus, the cream specialist will develop various types of creams, carry them through the pilot plant stage, put them into production, supervise control and release batches for filling. If he is continuously in touch with production, he can often prevent troubles and more easily correct them when they develop. This same specialist will be well qualified to examine competitive samples and to analyze and duplicate them, to check newly available ingredients, to conduct analytical control of raw materials and certainly to have a voice in panel testing. As the work grows in volume, as it inevitably does, assistants should be made available, junior chemists or technicians. Still further along in terms of growth, general specialists such as an analytical and control group and a pilot plant group (acting as close liaison between the laboratory and the plant) can come into being.

As against the obvious advantages of an arrangement of this type are the dangers of too great specialization, the consequent narrowness of vision and reduced opportunities for cross-fertilization of ideas. These limitations may be largely overcome if the research director properly exercises his function as a coordinator.

The exploration of new ideas from every source, at least to the point where prospects of success can be guessed, is certainly a most important function of the research department. Yet most persons in the department will usually be fully occupied with continu-

ing projects which would suffer if attention were deflected away from them. A useful addition to the staff would be an exploratory jack-of-all trades, reporting to the director, who would be able to give these ideas a work out, then either turn them over to the appropriate specialist or shelve them.

Another method of exploration is the free time device, whereby specialists may use up to a certain percentage of their time to verify their own brainstorms. This assures tender loving care for the idea but the care may become too intense, and still leaves no provision for ideas from outside, which may not fit into the specialization categories.

Basic research, truly fundamental research—protein structure, skin enzymes, scientific emulsion theory, organic synthesis—to my mind does not belong in a commercial cosmetic research department. The atmosphere in such a research organization cannot be conducive to leisurely contemplation alternating with intensive, meticulous work. Nor will basic research, which by its nature can promise no short term results and tends to be unending, fit into an essentially profit and loss commercial budget.

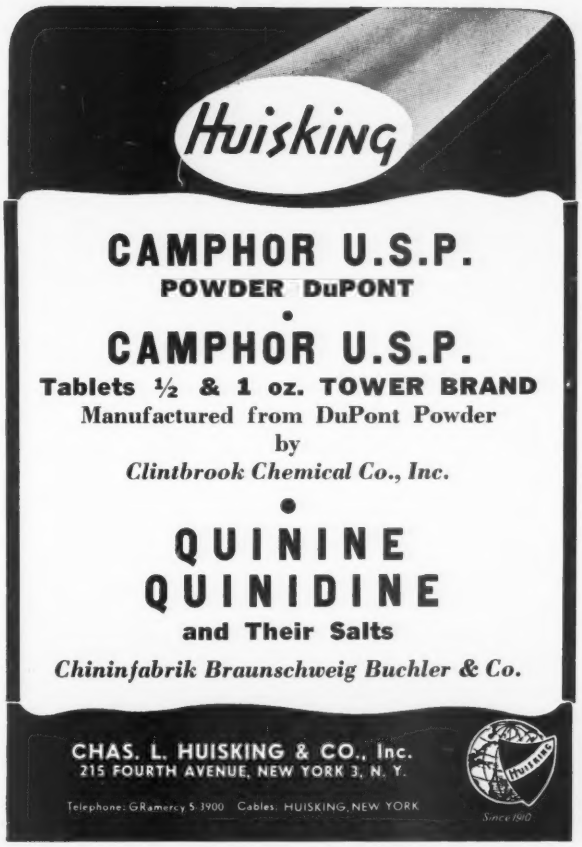
Still this type of work, as well as other jobs not fitting into the capabilities of the organization, needs to be done. The research grant to a university department or other special organization set up for academic investigation is a useful means of increasing information in esoteric regions with limited expenditure. Commercial consultants can often provide special knowledge, techniques and equipment required only at irregular, widely separated intervals. Some of these with breadth of knowledge and experience may act as catalysts in day-by-day and special problems.

The research organization is not a collection of functions—it is a group of people, intelligent, well-educated, useful. The picture of the chemists as either the absent-minded professor or the mad scientist exists only in comic books, which apparently some adults still read. Nor is the commercial chemist so dedicated to his "science" that he is unaware of the uses of money. The chemist worth hiring is worth keeping, not by a salary rise to match an outside offer, but by anticipating this offer. It may as yet be too advanced for our industry, but a large, well-known pharmaceutical company with an extraordinarily low turnover, a number of years ago instituted the continuing policy of giving its scientific personnel an extra week vacation; moreover, this company shares its profits on a new product with those who participated in its development.

The Research Director

The research director is the keystone of the research organization. He might be characterized also as the conductor who leads the orchestra and makes of it a harmonious unit. I have heard other characterizations of some research directors by members of their departments, but these are hardly constructive.

The director should personify the management



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point of view to his department, and research to other members of the management group. As the leader of a technical group he should, as much as possible, embody the many aspects of the research function. He must know, for all company products, the state of competition, raw materials, process, consumer testing, control, etc., but perhaps not to the depth of his specialists, but with greater breadth. He must, with respect to his department, be able to convince management of the virtues of sufficient patience, to grant enough time to do a good job. He should have imagination, the ability to produce ideas, but if he has selected his specialists well, he may not be able very often to beat them to the punch. Nor should he compete with them for credit and he should make plain, within and outside the department, his recognition of merit. His breadth of knowledge should be such that he can make technical contributions in discussions with his people. He should be readily accessible.

In the philosophy of research direction there are two general approaches, and often a combination of these conflicting methods of operation. I have described, idealized, of course, the coordinator, the team leader. He leaves ample scope for the professional development of his people. Perhaps the other kind of director is becoming less common. He is the strong man, the dictator, and all of his subordinates are merely extensions of the director's hands, to execute his ideas. He continues to exist only because every now and then he is actually good enough (and lucky enough) to make his kind of research department successful, despite his credit grabbing and stifling of initiative.

As important, but not necessarily more so, is the function of the research director as technically trained management. He will try to get the job done in minimum time and with the least waste of money. He will exercise his mature judgment in deciding which projects are feasible, and offer best return on the investment. He can decide whether or not offshoots of the main line of research are worth pursuing. He will know when refinements should be stopped and the product considered completed. He will recognize a blind alley when he meets it and know when to stop a hopeless job. He must know when the size of the staff must be increased and when to utilize outside organizations with facilities beyond the noremal scope of his department. He must earn a reputation for wisdom and ingenuity so that he will be an efficient staff advisor to management on all technical matters. Certainly he must cooperate whole-heartedly with overall financial and other policies of management and his voice should be important in shaping the company's future.

As an individual and as a spokesman for his department, the research director can be an important focal point for information and cooperation. An informal, easy-going, non-competitive relationship should be established with other departments, especially sales and promotion. No one should be better able to translate technical facts into easily understandable language. When communication is firmly established, promotion people will be able to spot trends as they begin to form and suggest products and modifications to make selling easier. Advertising people, inside and outside the company, constantly striving to measure consumer response, may sometimes from their special experience, prevent wasted effort in a sterile problem. Yet they might be surprised to discover that their mental specifications for an ideal product can be more closely approximated by the research department, than they thought possible. On a day-to-day basis their technical friend, talking their language, may start them on free-wheeling thinking to their own new advertising copy ideas.

Management should select the best approximation to this ideal research director. Obviously, this many-virtued individual is where you find him. He will have the necessary training, education and ability, but will not necessarily have a Ph.D. or M.D. label. Research has been established long enough now in this cosmetic industry so that there are men with the necessary breadth of experience and stature to handle top jobs. The man from another field will have much to learn before he can be sure-footed.

FOREIGN PHARMACEUTICAL PATENTS

(Continued from page 97)

The rule of reason also applies to compulsory licensing. If a pharmaceutical product is not successful, no one is likely to ask for a license. However, if the product is of major importance, the United States owner of foreign patents must be prepared to face the fact that if he does not manufacture abroad, he may have to share the market with foreign manufacturers, subject to royalty payments.

Taxes on Foreign Patents

Unfortunately most foreign countries demand taxes at various times, usually every year, and usually graduating upwards with the age of the patent, to maintain a patent in force. This is not the place to consider the merits or demerits of such taxes. They exist and they must be paid. But also they are extremely variable from country to country. Therefore to avoid service charges on individual payments, in certain countries prepayment of taxes in a lump sum if permitted may be advisable. This will obviously depend on the amount of the taxes and the estimated future importance of the invention. The subject is more or less empirical. Certain cautious rules can be worked out for certain countries for the early years of a patent—unless a pioneer invention is recognized at the start so that complete or substantial prepayment of taxes may be justified. However in general,

it should be the duty of the patent committee of a pharmaceutical company to evaluate the commercial worth of foreign patents each year in relation to the cost of maintenance.

Selection of Countries

At this point, in the light of the above discussion, it would appear that the following main factors should be considered when selecting foreign countries in which to obtain patents for pharmaceutical inventions:

The nature and potential future importance of the invention, and whether in the absence of foreign patents copying would be a temptation for competitors.

Whether product or process claims could be obtained in a given country; whether such claims would be broad or limited; and whether they would provide protection against importation.

Whether the nature of the invention is such that it would only be used in a few countries, or would have a potential market throughout the world.

Whether the foreign patents would be used by existing or prospective licensees or affiliates, or would be intended primarily to protect export markets—bearing in mind the attitude toward pharmaceutical patents in the particular country and also the ultimate possibility that others might apply for compulsory licenses in the absence of domestic manufacture.

What Can Be Protected

Without going into any details of practice, it may be of interest to review very briefly what can be protected in a foreign pharmaceutical patent and consider the special problems of mixtures and antibiotics.

The simplest type of pharmaceutical invention to claim is a single specific new compound. This can be fully defined verbally or by formula, and its preparation clearly exemplified. However, such cases are somewhat rare. More usually a new series of compounds is produced having a class formula. Whether or not a particular country permits product or only process claims, the problem is to define the range of the variables in the class formula. If there are substituents, such as alkyl or aryl groups, the number of carbon atoms or some other appropriate identification for the beginning and end of the range should be given, and specific examples should illustrate compounds throughout the range. In a well-known leading case in England, a general formula was proved to cover some millions of possible compounds, whereas only two compounds were specifically described. The British courts held the claims were "covetous" and the patent was declared invalid.

In some countries a new series of compounds is considered as a chemical invention with the pharmaceutical properties incidental. However, most countries require the pharmaceutical properties to be given in some detail, which is difficult at the early stage of development, in view of the time necessary for satisfactory clinical tests. Therefore, from the

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viewpoint of validity and obtaining strong pharmaceutical patents, it is probably better to limit the claims to new compounds for which the beneficial pharmaceutical properties have been positively demonstrated. If new compounds in a series are later found to have similar properties, these can usually be protected in patents of addition.

The protection of mixtures, as distinguished from products of a chemical reaction is difficult, to say the least—that is, where known ingredients having pharmaceutical properties are mixed with other known ingredients which in themselves may be pharmaceuticals or carriers or extenders. Should the public be prevented from buying and mixing ordinary and well-known compounds? If not, what can be regarded as patentable in a mixture? What is not patentable is probably best expressed in the British patent law as follows: "If it appears to the comptroller in the case of any application for a patent that it claims as an invention a substance capable of being used as food or medicine which is a mixture of known ingredients possessing only the aggregate of the known properties of the ingredients, or that it claims as an invention the process producing such a substance by mere mixture, he may refuse the application." In general, all the important countries having a strict examination use this criterion, some more stringently than others. An unexpected effect, beyond the aggregate of the known properties, requires synergism, involving some form of interaction of the ingredients in the mixture as ditinguished from ordinary chemical reaction. The synergistic effects may be of widely different types—such as unexpected preservative or antiseptic properties, reduction of toxic effects, etc. There is probably a general tightening up in most patent offices in regard to mixtures; because some synergism between active compounds is more or less normal, examiners are looking for exceptional or unexpected synergism.

The protection of antibiotics constitutes a new and specialized branch of patent practice. In general, all basic antibiotic patents are similar in form, and inherently involve fermenting a specified organism in a nutrient medium. This sounds straight-forward enough. Actually it is not, and patent practice is becoming involved in semantics. In the first place it is very rare that the identifying structural formula for a new antibiotic can be worked out by the time a patent application is ready to be filed; therefore the product is defined by name, which is nothing more than saying it is the product of fermenting the specified organism. The novelty then resides in discovering and using an organism, since fermentation techniques in themselves are old and conventional. Invention defined as discovery is treading on dangerous ground. It is probable that patents in countries permitting product claims are stronger than those having only process claims. The products can usually be defined precisely by their infrared spectra, although, in a few countries, examiners have tentatively proposed that antibiotics are actually natural products and may be found in nature in an appropriate environment. The situation is further complicated by the fact that the organisms themselves seem to be becoming elusive as generations multiply, and susceptible to very wide variations in morphological characteristics.

Until now, basic antibiotic patents have been granted in very broad form in most countries throughout the world. But patent office examiners are becoming wary, and litigation has begun. Where the same antibiotic is produced by allegedly different organisms, the courts are likely to be faced with an almost insuperable task. There are few experts competent to lead a judge through the jungles of morphological data. A most interesting theory has recently been proposed in Germany—that when a later patent produces the same antibiotic as an earlier patent using an allegedly different organism, this is merely an analogy process involving no new technical effect and therefore not patentable. This would by-pass comparison of the organisms.

The Future Picture

To look into the future does not necessarily need a crystal ball, assuming no more world wars. The world population curve is rising, and public health is of growing concern in what we consider the less developed and over populated countries. Therefore clearly there will be increasing consumption of pharmaceutical products abroad. From the viewpoint of the U. S. industry there may be stronger emphasis on Latin America, Africa and the East. However, in many countries in these regions patents are granted without examination or with superficial examination. They are more or less naked rights, with strong teeth in them, but possibly vulnerable with respect to compulsory licensing and special regulations relating to importing. Difficult as it may prove in practice, the future maintenance of satisfactory foreign patent positions is likely to depend more and more on cooperation with expanding local industry.

PATENT THOUGHTS AND TRENDS

(Continued from page 59)

For example, some countries don't issue patents on chemical products or foods or medicines or chemical processes. When the sad fact is learned, hundreds of dollars may have been spent. If time had been adequate the application would not have been filed because it would have established that the country concerned does not issue patents in that field.

Of course, this is not to say that every application which has been rejected should not have been filed. We all know that one cannot be certain that a par-

ticular invention is patentable. A patent applicant must always be prepared to argue that what he has done constitutes invention. However, what we are referring to here is the point that there is no logic in filing a patent application, regardless of the merits of the invention, if the country concerned does not issue patents in the particular field of the invention.

Congressional Review Patent System Progressing

It may be remembered that early last summer it was brought to the attention of the readers that the entire American Patent System was again under review, this time by a Senate sub-committee.

Among the jobs undertaken by the sub-committee was a series of research studies which it is having made for it. Various experts in the field have been assigned subjects for study and reports. It now appears that a few of these studies have been completed and are being published for sale by the Government Printing Office in Washington, D. C. The completed reports as of December 10, 1956 were the following ones:

Proposals for Improving the Patent System
by Dr. Vannevar Bush

Patent System in the Modern Economy
by Mr. George Frost

Distribution of Patents Issued to Corporations
by the Patent Office under the direction of Commissioner Robert Watson and Examiner in Chief P. J. Federico

RECENT PATENTS

2,767,168—**Bristol Labs.—Streptomycin Purification.**

2,767,173—**Schenley Industries—Bactericidal and Fungicidal Compounds.**

2,767,174—**Schenley Industries — N - Benzylidene and N - Quinolylmethylene-Substituted 2 - Aminobenzisothiazolones.**

2,767,179—**Irwin, Neisler & Co.—Quat. Ammonium Salts of Carboline Derivatives.**

2,767,180—**Am. Home Products—Triazine Diuretic.**

2,767,183—**Burroughs Wellcome — 6 - Benzylpyrimidines.**

2,767,186—**Burroughs Wellcome—Quat. Ammonium Salts of Substituted Benzhydryl Piperazines.**

2,767,192—**Schenley Industries—Ketone Hydrazones.**

2,767,193—**J. R. Geigy — 5, 5 - Disubstituted 3 - Aminohydantoins.**

2,767,195—**Am. Cyanamid — 2 - Substituted -4 - Alkylcarboxyl - 1, 3 - Dithiacyclohexane Tetraoxides.**

2,767,198—**Upjohn—Enolates of 21-Formyl Steroids.**

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